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## CONTENTS

	PAGE
EDITORIAL .. .. .	97
THE EDUCATIONAL IDEALS OF PLATO—	
A. R. WADIA, B.A., Bar.-at-Law .. ..	107
TWO BOOKS ON ANCIENT INDIAN PHILOSOPHY—	
R. SHAMA SASTRY, B.A. .. ..	121
THE MINISTER UNDER THE NEW ACT—	
S. KESAVA IYENGAR, M.A. .. ..	130
THE SPIRIT OF SOCIAL SERVICE—	
W. E. CLARK, Ph.D. .. ..	139
THE SPENSERIAN STANZA IN SPENSER'S HANDS—	
S. V. RANGANNA, B.A. .. ..	145
REVIEWS .. .. .	160
COLLEGE NOTES .. .. .	177
THE PRESS AND THE UNIVERSITY—	
THE EDITOR .. .. .	182
SCIENCE NOTES .. .. .	185
EDUCATIONAL NOTES .. .. .	191

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# CONTENTS

	PAGE
EDITORIAL— .. .. .	201
MATTHEW ARNOLD'S CRITICAL CATCHWORDS—	
J. C. ROLLO, M.A. .. .. .	210
SOUTH INDIA AND HER MUHAMMADAN INVADERS—	
S. SRIKANTAIYA, B.A., B.L., M.B.A.S. .. .. .	222
THE INTELLIGENCE OF SCHOOL CHILDREN—	
S. P. CHINNAPPA, M.A., PH.D. .. .. .	231
FROM HUME TO GREEN (IV)—	
N. NARASIMHA MOORTHY, M.A., B.L. .. .. .	242
THE THEORY OF RELATIVITY—	
C. KRISHNAMACHAR, M.A. .. .. .	251
THE VEDAS AND SCIENCE—	
R. SHAMA SASTRY, B.A. .. .. .	267
INDIAN ART (I)—	
N. MADHAVA RAU. .. .. .	270
ENGLISH INDUSTRIAL HISTORY—	
S. V. KRISHNASWAMY IYENGAR, M.A., B.L. . . . .	278
DOMINION HOME RULE IN PRACTICE—	
S. KESAVA IYENGAR, M.A. .. .. .	284
GLIMPSES OF TUDOR ENGLAND— .. .. .	
THE EDITOR .. .. .	295
REVIEWS— .. .. .	299
COLLEGE NOTES— .. .. .	319

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# CONTENTS

	PAGE
EDITORIAL .. . . .	329
THE GROWTH OF PSYCHOLOGY (I)—	
A. R. WADIA, B.A., BAR-AT-LAW ..	343
THE PHILOSOPHY OF SANKARA—	
V. SUBRAHMANYA IYER, B.A. ..	354
A BOOK ON HINDU ETHICS—	
R. SHAMA SASTRY, B.A., PH.D. .	359
FROM HUME TO GREEN—	
N. NARASIMHA MOORTHY, M.A., B.L. ..	362
CO-EDUCATION—	
H. S. HENSMAN, M.A. ..	369
AN ADDRESS TO THE UNIVERSITY UNION -	
G. N. CHAKRAVARTI, Rai Bahadur ..	372
MYSORE UNIVERSITY: A COLLEGE DAY COMMENT -	
P. RAMASWAMIYA, B.A., B.L. ..	375
THE NOVEMBER SENATE MEETING—	
THE EDITOR ..	380
A LIFE OF RABINDRANATH TAGORE—	
J. C. ROLLO, M.A. ..	381
REVIEWS .. .. .	384
SCIENCE NOTES .. .. .	396
SUPPLEMENT .. .. .	1—26

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# CONTENTS

	PAGE
<b>EDITORIAL</b> .. .. .	1—10
<b>THE GROWTH OF PSYCHOLOGY (II)—</b>	
A. R. WADIA, B.A., BAR-AT-LAW .. ..	11—19
<b>SECONDARY EDUCATION: SOME SUGGESTIONS—</b>	
S. KESAVA IYENGAR, M.A. .. ..	20—27
<b>EINSTEIN'S NOTIONS ABOUT TIME AND SPACE—</b>	
C. KRISHNAMACHAR, M.A. .. ..	28—32
<b>THE PROBLEM OF THE WOMAN'S PART ON THE MODERN STAGE—</b>	
H. V. BHASHYAM IYENGAR, B.A. .. ..	33—38
<b>INDIAN ART (II)—</b>	
N. MADHAVA RAO .. ..	39—47
<b>UNIVERSITIES AND SCIENTIFIC RESEARCH—</b>	
C. KRISHNAMACHAR, M.A. .. ..	48—51
<b>A COMPLAINT ABOUT "CHITRA"—</b>	
J. C. ROLLO, M.A. .. ..	52—55
<b>AN EXAMINATION NOTE—</b>	
J. C. ROLLO, M.A. .. ..	56—57
<b>THE DRUM-BEAT OF ANGELS—</b>	
K. A. KRISHNASWAMY IYER, B.A. .. ..	58—67
<b>REVIEWS</b> .. .. .	68—78
<b>COLLEGE NOTES</b> .. .. .	79—91
<b>SCIENCE NOTES</b> .. .. .	92—99
<b>THE SENATE MEETING</b> .. .. .	100—101

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## CONTENTS

	PAGE
EDITORIAL .. . . .	103—111
THE THEORY OF RELATIVITY (II)—	
C. KRISHNAMACHAR, M.A. . . . .	112—126
THE GROWTH OF PSYCHOLOGY (III)—	
A. R. WADIA, B.A., BAR.-AT-LAW, . . . .	127—150
BARYMATH AND BRADYMATH: A DIALOGUE—	
J. C. ROLLO, M.A. . . . .	151—156
FROM HUME TO GREEN (IV)—	
N. NARASIMHA MOORTHY, M.A., B.L. . . . .	157—162
INDIAN ART (III)—	
N. MADHAVA RAO . . . . .	163—166
MYSORE UNIVERSITY UNION: REPORT FOR	
THE YEAR 1921-22 . . . . .	167—169
REVIEWS .. . . .	170—176

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## CONTENTS

---

	PAGE
EDITORIAL .. .. .	177—186
THE TEACHING OF HISTORY IN SCHOOLS—	
N. K. VENKATESWARAN, B.A. ..	187—192
THE NATURE OF COMEDY (I)—	
J. C. ROLLO, M.A. ..	193—196
INDIAN ART (IV)—	
N. MADHAVA RAO ..	197—200
BUDDHISM AND QUIETISM—	
V. RAGHAVENDRA RAO, B.A. ..	201—203
INDUSTRIAL DEPRESSION IN EUROPE—	
M. SHAMA RAO ..	204—213
VOCATIONAL TRAINING—	
A. S. VENKATARAMIAH, B.A., L.T. ..	214—217
REVIEWS .. .. .	218—236
UNIVERSITY NOTES .. .. .	237—247

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## CONTENTS

	PAGE
EDITORIAL .. .. .	249—255
SCIENCE IN POETRY—	
F. L. USHER, B.SC. .. .. .	256—264
THE EUGENICS OF PLATO—	
A. R. WADIA, B.A., BAR.-AT-LAW .. .. .	265—277
FROM HUME TO GREEN—	
N. NARASIMHA MOORTY, M.A., B.L. .. .. .	278—285
THE NATURE OF COMEDY (II)—	
J. C. ROLLO, M.A. .. .. .	286—288
THE THEORY OF ELECTRONS—	
M. RAJA RAO, M.A. .. .. .	289—298
INVESTIGATIONS ON THE OPTICAL PROPERTIES OF NON-LUMINOUS POTASSIUM VAPOUR—	
G. I. NARAYAN, M.A., A. INST. P. .. .. .	299—300
THE DRUM-BEAT OF ANGELS (II)—	
K. A. KRISHNASWAMY IYER, B.A. .. .. .	301—311
THE CONTACT OF INDIAN ART WITH THE ART OF OTHER CIVILISATIONS—	
STELLA KRAMRISCH, PH.D. .. .. .	312—324
REVIEWS .. .. .	325—328

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# THE MYSORE UNIVERSITY MAGAZINE

*JULY 1921.*

## EDITORIAL.

MR. C. R. REDDY.—The news that Mr. Reddy had resigned the Inspector-Generalship of Education (in order, it was said, to enter political life in Madras) came as a great surprise to many of us, for the application of the educational reforms worked out by him and modified by Government had scarcely begun. That application is at once a complicated and a delicate business, and one wishes that it had been possible for Mr. Reddy, with his unique grip both of policy and of detail, to stay for the difficult first years of the scheme's operation. He has, however, given memorable service to the State, which has emphatically expressed its gratitude. It is by the educational reforms that the public will remember him, but Mr. Reddy was for many years a professor, and for a short time principal, of the Maharaja's College, and, of course, retained his connection with the University after he became Inspector-General. Everyone knows the feelings with which his students regarded him : he was absolutely at one with them. One thing he did for them was to teach them how to debate. He himself has always been an eminent debater, from the days when he was a prominent officer of the Union in Cambridge, and he is now embarking upon a career in which this power, and his other powers, will for the first time have full scope. Everybody in Mysore recognises the certainty of his eminence in political life. In Mysore he has been subject to the most violent party criticism, because the work upon which he has been engaged is work upon which parties differ acutely. In reality, however, Mr. Reddy is bigger than party, and we believe it will be found that in politics



his ability, force, and tact will draw to him a following not limited by party-leanings. We wish him all success and happiness in the service of the country.

**THE RANGOON UNIVERSITY.**—The report of the Calcutta University Commission dealt the death-blow to the federal university system in India and Burma. We shall never see another federal university established, and those that exist are but awaiting the opportunity to divide into smaller universities on the unitary plan. But the old method is vigorous in its death-throes. There are always people to maintain that the old is well and the new is ruin to the country. In the copies of the *Burma Gazette* which present the original bill for the new Rangoon University, and various speeches upon that bill in the Burma Council, a very interesting conflict is recorded. The unitary scheme was accepted and the bill was passed, but not before some members had stoutly opposed it—with arguments which do not lack interest. One argument was like this.—“Oxford and Cambridge are excellent in their western place; but your Oxford and Cambridge system will not suit our eastern conditions.” The misconception is as common as it is curious. No one could imitate anywhere, or would seek to imitate, Oxford and Cambridge. They are totally inseparable from their tradition. And with their many colleges (albeit in one city), each one in many respects repeating the others, they bear no resemblance whatever to the unitary type of university proposed for India and Burma. In the latter complete absence of duplication is intended, and the universities that come nearest to being models are the uni-collegiate, modern provincial universities of Britain.—This argument, then, exemplifies ignorance of fact and aim. Equally interesting is an example of logic. We abbreviate the argument. ‘We can understand the necessity of a unitary university for Bengal, since Bengal is very large—so large that the federal system cannot be worked satisfactorily there. Burma is much smaller.’ There is something very notable about the suggestion that a large area requires a unitary, a small area a federal, university. Other arguments were the expensiveness, to the student, of a residential university (so that the poor will be bereft of university education and the rich of salutary association with the poor), the separation of students from the moral and religious teachings of their parents, the probable sufferings of the Rangoon University from congestion and from the need for looking after young students—and so on. As one reads one sees that it is just one great, reluctant prejudice.

In supporting this prejudice it is asserted that the wealthy and aristocratic who alone, it is said, will be able to enter a residential university in Rangoon, are "proverbially ease-loving and idle;" and, further, their training there will be unprofitable, for "with the help, comfort and convenience they will get from inside the university walls, when they come out they will not know how to struggle patiently and cheerfully in this rough world." Which amounts to the contention that the life of a student, and particularly a rich one, should deliberately be stiffened with duly adapted hardships.

A few details of the scheme may be referred to. The University Council, "the supreme governing body of the University in administrative matters," differs very much from ours both in size and in composition. Its number is not fixed precisely, but it may have as many as forty-eight members. Of these, twenty are elected by various bodies. The Senate elects eight from among its own members (four of the elected must be professors), registered graduates four from among themselves, non-official members of the Legislative Council three from among themselves; and one member each is elected by the Rangoon Bar Library Association, the Burma Medical Council, the Burma Chamber of Commerce, the Rangoon Municipal Committee, and the Rangoon Trades Association. There is a strong religious element: both the Bishop of Rangoon and the Roman Catholic Bishop of Rangoon are *ex officio* members, and five other religious bodies engaged in educational work are represented. It is a remarkably strong and representative Council, but somewhat unwieldy for executive work, and a special Executive Committee is therefore formed. This consists of the Vice-Chancellor, the Director of Public Instruction, the head of each constituent college, and six members elected by the members of the University Council from among themselves. The Senate (if we estimate rightly the number of professors in the University, all of whom, with not fewer than ten lecturers in constituent colleges, are members of the Senate) is considerably smaller than the Council, but there is no tendency to assign to the Council functions which usually belong to a Senate. The Senate itself has a small Standing Committee.

There are for the present to be two constituent colleges, University College and Judson College. Both are situated in Rangoon, and their ultimate amalgamation is contemplated. The unitary idea is rigidly enforced. Other colleges may be recognised as constituent colleges in regard to courses other than those in Arts, Science, and Law, but only if they are in, or close to, Rangoon, except that a college providing courses in Mining, Agriculture, or Forestry may be thus recognised if it is situated anywhere in Burma.

Courses of study are of particular interest to us, and these were detailed in a schedule which formed part of the Bill as originally brought forward, but it was decided not to make such details a part of the Bill. Probably, however, the courses of study now adopted differ little, if at all, from those then detailed, and we may refer to one or two points. The Calcutta University Commission recommendation as to the institution of "intermediate colleges" and the postponement of entering the University is not followed. Another, and, we think, a better system of securing fitness for a graduation course is adopted. The Intermediate course and the B.A. course consist of two years each, and a student who has shown a certain proficiency in the School Final (or in the European High School) examination may be admitted direct to the Intermediate course. Other students, however, have to take a preliminary year's course in a constituent college. Thus from the beginning they are *in the University*, and enjoy its advantages.—The Schedule proposes an interesting step, often discussed, in many places—that of making English Literature optional, in a sense, in both Intermediate and B.A. courses. In the former, composition is to form at least half the course in English, while a certain number of texts—all "simple" except a play of Shakespeare—are to be studied. There is a provision that instead of a vernacular language additional *English* texts may be studied. Thus an option is given as to the number of English books to be studied. But in the B.A. course, while English composition is compulsory, English Literature is *entirely* optional. (Naturally, the optional course in English is somewhat more advanced than the compulsory courses usual in other universities, for only students with special fitness will choose this course.) It is possible for a student so to choose his B.A. subjects as to avoid all language or literature study except English composition. Evidently the principle has been accepted that some students have little to gain from literary study, and that the needs, as regards English, of a certain proportion of students are met by a training in the practical uses of the language. The idea is emphasised by the arrangement that those students who have to take a preliminary year study during that year no English texts at all, but only composition and the use of English in speech. We dislike the whole idea, and hold to the conviction that no student—at any rate, no student worthy of admission to an Arts course of any description—lacks fitness to obtain considerable benefit from literary study; that, in fact, this study gives to all students the greatest benefit among those which belong to an Arts course. And perhaps the student who has no *special* fitness for literary

study most needs this benefit. That he has the power to accept it is a fact that is constantly disputed but is recognised by all who have had the opportunity of expounding great literature to an average class of students. To some students, of course, linguistic and other barriers prove very formidable, but they can always be enabled to get at the literary greatness of the work they are studying, and they will be very much the poorer if deprived of this opportunity. The literature studied need not be English literature, though that has peculiar claims. But a course without a compulsory literature-element is, as an Arts course, an inferior thing.

It is noteworthy that of the three historical "optionals" in the B.A. course—Indian History, European History (with special reference to England), and Ancient History (that of Greece and Rome)—only *one* may be taken. Similarly, while courses in chemistry, physics, zoology, botany, and geology are provided, no combination of these is allowed. There is, however, a B.Sc. degree for those who wish to specialise in science.

While degrees in Arts, Science, Law, and Medicine are provided for, both Teaching and Commerce have to be content with diplomas. Finally there is to be an oral as well as a written examination for every degree in Arts and Science—an admirable provision, though one that will no doubt be very expensive and difficult to work.

**THE DACCA CURRICULUM.**—The provisionally approved scheme of studies for Dacca University has been issued, and the first session of the University's work has begun. Here we have Calcutta Commission undiluted, unalloyed: for the first time the scheme recommended by the Report is placed upon its trial. That Report is now beginning to take its due place in educational opinion in India. Hailed at first, by many, as a final and well-nigh inspired judgment, it is now recognised to be but one among several such documents, though the latest and in some respects the best. Some matters, such as the necessity for the unitary system in universities, it has indeed removed beyond serious controversy. But in other matters of urgent importance, such as women's education and the correlation in India of eastern with western studies, it does not help us. In yet others its judgment is open to the most serious criticism. Learning, wisdom, impartiality are not enough without such a knowledge of country, conditions, and people as is hard to acquire in India even by a residence of many years. Thus one has to regard the Dacca curriculum not as a supernatural revelation but as a

fallible human scheme; and the more one looks at it the less one likes some of it. The most serious objection is undoubtedly that urged by Dr. Miller in the words quoted in the "Educational Notes" in our last issue. The pass course of the University occupies only two years. The "intermediate colleges" are no part of the University, and the student will live in a university atmosphere only during the further two years of his graduation course. It is not enough: he is in many ways the loser. However well-equipped the members of the staff of an Intermediate College may be, they will not be like university professors. The Calcutta Commission's Report, and the recent statement of the Vice-Chancellor of Dacca University, emphasise the virtue of setting free the professors for higher work. But the gain is very small, for the university professor need never spend much time with intermediate-stage students: even an hour a week would suffice to bring them under his influence and show them something of the ideas and methods for which he stands. Many of them must be content with an intermediate course and seek employment thereafter, and anyone who knows Indian students must recognise how valuable would be to them the remembrance of the university professor's "hours." Still more serious is the loss of university life to those who must leave at that stage, and its limitation to two years in the case of others. They are all old enough to respond to university influences, and such association with senior men as real university life means is perhaps even more valuable to them than the influence of the professors. We are thinking of the social life of the university, of its societies, and particularly of its Union. In our own Union the first-year students take an active and sometimes very noteworthy part: there, as in games, senior and junior are constantly together—very much to the advantage of the latter. And is there to be found, anywhere else, a university graduation course that is limited to two years? In British universities, for example, the course is sometimes of three years, sometimes of four: nothing shorter has ever been dreamt of.

The intermediate college plan is, of course, exceedingly useful (as has already been remarked in this *Magazine*) in providing a method of discriminating between those who are fit and those who are unfit for a university career: it is almost impossible to do this, in India, at the matriculation stage. The problem is a particularly difficult one, but we are inclined to think, on the whole, that the deferring the entrance of the fit in order to debar the unfit is not the best solution, and that a better one is the Mysore system of holding a discrimination test at the end of the first university year. It is to be remembered, that the

Calcutta Commission recommended that both in Dacca and in Calcutta the pass course should be lengthened to three years as soon as possible; and Dacca will no doubt attempt this. Thus a three years course is really kept in view. But will public opinion endorse, or will it actually prevent, such an extension of the period between matriculation and graduation? The whole plan assumes that eventual extension: if it does not come true, the two-years limitation, which is at any rate a present evil, will be perpetuated unless the whole scheme is reorganised. Again, the Calcutta Commission believe that with better teaching in schools the matriculation age will be lowered and thus the intermediate-stage student will really be a schoolboy in age. That remains to be seen; and in any case he is of university age now.

In Dacca, alas! as in Rangoon, Literature is optional in the B.A. pass course. Ten groups are provided. English Literature appears in only three of them. Four contain no literary element at all except what is incidental to subjects such as history and philosophy. We have spoken of this matter in connection with the Rangoon scheme. The Calcutta Commission, obsessed with the idea that Indian university courses hitherto have been "too literary," have swung the pendulum too far. "History, Politics, Economics," "History, Philosophy, Principles of Education,"—such courses will not make the best of a man.

THE TRIPARTITION OF THE B.A. DEGREE.—It will be remembered that some time ago the Senate passed a motion dividing the B.A. Degree into three parts, thus separating English from Vernacular. We believe that final orders upon this issue have not yet been passed, and very probably decision upon the matter will be deferred until the committee appointed to consider the whole scheme of the University in the light of the Calcutta Commission's Report has finished its work. Examinations and courses of study will naturally form a large part of the Committee's subject-matter. Whether the proposal as passed by the Senate will commend itself we cannot tell. What is quite clear is that in this matter the present scheme cannot stand. All sections of opinion in the Senate united in condemning it, and we may recall attention to some of its anomalies.

The combining of English and Vernacular into a single part in the manner defined in the Ordinances has certain results. The first is that a pass in the one cannot be secured without the attainment, at the same time, of a certain percentage in the other. This perhaps is not unsound: in fact, its possible soundness is the only real objection we can see to the tripartition approved by the Senate. But the second and third results are exceedingly unfortunate. The second is that a certain proficiency in

the one is allowed to compensate for a certain deficiency in the other: 45 per cent in one subject will elevate 35 per cent in the other to the level of a pass. This tends to frustrate the aims of the University, and to injure both its own repute and the prospects of its students. 35 per cent is not a pass-mark: all valuation is done—and no other way will fit the Ordinances—on the basis of 40 per cent as the passing minimum. Thus 35 per cent in either subject is a dead failure in that subject. Now, when a man fails in a *branch* of a subject it is righteous enough to allow excellence in another branch of that subject to compensate. But no sort of reasoning can make English and Vernacular branches of the same subject: the fact that they are *languages* does not go nearly far enough. We are thus confronted with the fact that a man may *fail* in English, or in Vernacular, and yet get his degree. One of the main objects kept in view by the University is the furthering of Vernacular studies by insisting on a certain proficiency therein on the part of every candidate for graduation, and this aim is frustrated by the rule. As regards English the result is even more serious. When a candidate seeks employment, and his graduation is the only means of valuing him, people discriminate between degrees; and when the examination passed is an Arts examination, English is taken as the prime criterion—most naturally, because of the practical usefulness of proficiency in that language. If two Arts graduates seek employment, and one comes from a university where 40 per cent is an irreducible minimum in English and the other from a university where 35 per cent can secure a pass (and on the same standard of valuation), the second man is at a very serious disadvantage. As a matter of fact our graduates will stand comparison with any. The general Arts course in this University is such as to ensure an exceptionally high standard of attainment, even with the disadvantage of which we have spoken. But this is much less likely to be known to the ordinary employer than the definite particular difference as to the pass-mark in English; and we owe it to the students to remove what may be a handicap to them. Similarly, the change is necessary from the University's point of view.—The third result of the present scheme is another very serious one. Students are placed in the first, or second, or third class according to proficiency in English and Vernacular together, and a student who is very good, but not quite first class, in the one may therefore be deprived of his "first" in the other. This is not only unreasonable but in practice most unfortunate. If a man gets a first class in English (or in Vernacular) nothing should deprive him of it. He is a first class man, and should be accredited as

such by the University. And, practically, if he seeks employment as a teacher, which is the destiny of many of our best men, the composite valuation is no sufficient guide to his prospective employers, and no sufficient help to him. Appointments are made, nowadays, for specialised work: the same man will not be asked to teach both English and Vernacular, or, if he is, his special work will concern one or the other. If a man has gained one of these composite first classes, it will not certify him as first class in English. And another man who *has* attained first class marks in English may nevertheless have been placed in the second class, losing the first class certificate which he needs and has earned.

To the Senate's proposal, as it stands, we have heard two objections—one, that it make the course too difficult; the other, that it makes the course too easy. The added difficulty lies in the fact that it is proposed to make 40 per cent an irreducible minimum in English and Vernacular separately. This, however, would be an advantage to the University, and, ultimately, to the student. As for the objection on the score of "easiness," it is the old objection to the compartmental system: by the Senate's proposal a student could pass in English and in Vernacular in separate years. The compartmental system is established in arts courses everywhere in India, and in most British Universities: in the Scottish universities each *subject*, not to speak of *parts*, can be passed in separately. Our own Mysore Arts degree can be passed in two parts, and the change proposed is to substitute three parts for two. We do not think this would make any difference as regards training and proficiency, but if that is feared it would be easy so to modify the Senate's proposal as to make it necessary to pass in English and in Vernacular at the same time. This would leave the gist of the proposal unaffected.

#### THE NEW DISPENSATION.—

1. There shall be a University.
2. There shall be no Vice-Chancellor; he cumbereth the ground. The name, however, is admirable, and shall be retained, with abolition of salary and of functions. One function, however, shall be assigned: the person to be called Vice-Chancellor shall maintain order at the meetings of the Senate.
3. There shall be no Registrar. There shall, however, be a man who shall perform all the functions of the Registrar. But—this is vital—he shall not be a Registrar.



4. There shall be no College Principals. A college principal consists in unequal proportions of professor and clerk, antagonistic elements. The clerkly function shall be transferred to an officer of the status of assistant commissioner. The more trivial functions of the principal, such as enforcing authority, promoting harmony, and fostering college life, shall be ignored.—Neither facts nor ideals shall be considered as having any bearing on this Act.

5. There shall be Professors. (There is no help for it.) They shall be independent. They shall choose, separately, which students they will admit to the college. They shall be given funds and shall do what they like with them.

6. There shall be Discipline. It shall be enforced in each college by a Court consisting of seven students, three tutors or demonstrators, and one professor against whom the gods have a particular grudge. The students will like this arrangement.

7. In spite of anything to the contrary herein enacted this shall be a University, these shall be Colleges.

Such, with but little of travesty, is an outline of a scheme for the reform of our University which has been printed and distributed by a zealous reformer, newly elected to the Senate. We should not have mentioned it at all had it not also been published in the press. The poor professional educationist, cramped by reality, perverted by experience, thwarted by the labour of long study of his art, peruses such a document with a kind of ingenuous awe.

## THE EDUCATIONAL IDEALS OF PLATO.

IN the twentieth century no truth has been so well established or so little challenged as the necessity of education. The system of compulsory education which was inaugurated in Europe and America in the last century has already borne fruit in the great popular awakening which we are experiencing now. But in the days of Plato the advantages and the intrinsic worth of education had not been so widely realised or so deeply sunk into the popular consciousness. He was the pioneer in this direction, the first to write a chapter in the history of European education and to declare that "there shall be compulsory education of all and sundry as far as this is possible." (Cf. *Laws*, V. p. 186).\* No word occurs perhaps so frequently in Plato as education. Whatever subject he may be discoursing on, he somehow veers round to speak of education with as great an intensity as the moth is attracted by light. After devoting pages and pages to the subject in the *Republic* and the *Laws*, not to mention other dialogues, he feels dissatisfied as if he had not spoken enough. Even towards the very close of the *Laws*, his last and longest dialogue, he speaks as if he would begin afresh discussing the whole topic of education and nurture, and those who have thought about education will sympathise with him, for the problem of education is one of those which never end, and never give perfect satisfaction. Human nature is so complex that it defies all efforts at exhausting its complexity. It is a fabric at which all would lend a helping hand. Quintilian and Comenius, Locke and Spencer, Pestalozzi and Froebel, and last of all Dr. Montessori have all contributed a wing here and a wing there. The result is not very harmonious. The corners are too angular and jut out too prominently. But with all its defects it is a solid fabric, for its foundations were well and truly laid by the genius of Plato. He was profoundly impressed by the magnitude of the task. In the *Laches* (l. p. 92) Socrates is made to reprimand Lysimachus and Melesias for treating the question of educating their sons in too light a fashion. "Is this a slight matter," he asks, "about which you and Lysimachus are deliberating? Are you not risking the greatest of your possessions? For children are your riches; and upon their turning out well or ill depends the whole order of their

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\* The references are to Jowett's edition.

father's house." In the *Protagoras* is slashed the short-sightedness of parents in entrusting the welfare of their children to the sophists, of whose capacity they know nothing, and he earnestly declares (I. p. 135) that "there is far greater peril in buying knowledge than in buying meat and drink," for "knowledge is the good of the soul" and can be truly had only from him who has true knowledge. In the *Laws* he declares his mighty faith, that "education is never suicidal." (Cf. V. p. 19).

Plato had been always convinced of the natural inequality of men, of their varying endowments. But he knew what has been often forgotten in the heat of the present day controversy between nature and nature, that the highest endowments for want of opportunities or lack of training may come to nought. The whole problem of education is the problem of developing the latent capacities of men. Men learn through experience and education is a selected type of experience giving an opportunity for an all-round development of human faculties. The work of nature has to be supplemented by nurture, and the extent to which good education is helpful, bad education is injurious. From his stand-point the highest education is the education in virtue; it alone is worthy of the name (V. p. 22). "That other sort of training," he says, "which aims at the acquisition of wealth or bodily strength, or mere cleverness apart from intelligence and justice, is mean and illiberal, and is not worthy to be called education at all." (Cf. V. p. 22). Character to use a modern term is the great aim of Platonic education. In an interesting passage he compares the robustness of Cyrus's own education with the education of his sons brought up in the luxury and license of his palace, which was really an aberration from the simple code of education of the ancient Persians, that was restricted to riding, shooting and speaking the truth. Plato seems to have been aware of the importance attached to the education of a Persian Prince, for in his *Alcibiades* (I. pp. 488—91) he dwells with gusto on the whole Persian system of training and he contrasts with it the poverty of Hellenic equipment for facing Persian armies. Plato may conceivably have been more rhetorical than sincere in the presentation of this contrast, but it sufficed as an introduction to emphasise the urgency of educational equipment.

In the *Republic* the whole programme of education has been drawn up with a special view to the needs of the guardians, but in the *Laws* education becomes democratic and is viewed as the privilege of all. The profound significance of it in the life of man is brought out when he makes education commence in the earliest years of childhood (Cf. *Protagoras*, I.

p. 146), and in the *Laws* he explicitly mentions (V. p. 21) that "the most important part of education is right training in the nursery," and hence he would train up a child for what he would be in his manhood by developing that particular excellence through play. Thus building children's houses would be an excellent training for him who is destined to be a good builder, or tilling the ground for him who is to be a husbandman. This idea of educating through sports has only been recently fully appreciated, and constitutes an excellent anticipation of the more elaborate system of kindergarten as developed by Froebel. Plato sought to develop the social side of life from the child's tenderest years, and made the temples of the village the meeting places for all the children of the village under the supervision of matrons, an idea which too was fully worked out by Froebel. (Cf. *Laws*, V. p. 174.) Froebel's central idea in the education of a child was a compromise between entrusting it entirely to the parents and starting schooling much too early. He hit upon the happy idea of a children's garden, where the children of a locality could congregate a certain number of hours every day, and till their own plot of ground. It was an experiment in joyous social competition between children, and was a definite recognition of the great educative value of play. It is note-worthy that Froebel's classic work on *the Education of Man*, published in 1826, dealt chiefly with the training of the child up to the age of seven. He believed with Plato that the question of education is not to put in something that is not there in the child's latent powers. Hence he felt the kindergarten to be a garden for the nourishment of infant souls. With Plato he realised that there is a continuity in education, and unless the foundation is strong the later superstructure will be flimsy and unable to stand the blasts of life.

There is another great principle of education which Plato recognised, but ignorant mothers and pompous teachers have often forgotten. It is the principle of freedom; he does not want anything to be taught to children "under any notion of forcing our system of education," "because" he argues "a freeman ought not to be a slave in the acquisition of knowledge of any kind. Bodily exercise when compulsory does no harm to the body; but knowledge which is acquired under compulsion obtains no hold on the mind." (Cf. *Republic*, III. 240.) Plato was aware of the extreme sensitiveness of children's minds, and he specially willed that they should never be punished so as to disgrace and humiliate them. (Cf. *Laws*, V. p. 174.) If only this principle were realised in actual teaching, the futile attempts of teachers to force down a formula into the unwilling brains of their pupils would be put a stop

to. Nothing learnt under compulsion ever lasts. The only way is gently and subtly to lead the recalcitrant mind of the pupil to look at a serious problem in the spirit of play. The problem of education in short is to evoke interest, and the measure of a teacher's capacity is his ability to arouse interest. It is here that Plato's advice and Froebel's practical appliances meet on a common ground.

The actual period of schooling in Plato's system begins only at the age of ten. Three years are devoted to letters. The next three years are set apart for the study of the lyre. (*Laws*, V. p. 192.) We gather from the *Republic* that the gymnastic equipment of all is to be completed by the age of twenty. For ten years after that the selected candidates will have to study the correlation of the different sciences. For five years from the age of thirty to thirty-five the study of philosophy or dialectic will have to be prosecuted. They alone who have successfully passed all these stages of education are fit to be entrusted with the high duties of guardians of the state. For fifteen years they are expected to place the wealth of their knowledge at the disposal of the state, and during that period they are to guide the destinies of the state. After the philosopher-kings have served the state for this period, they are free to devote themselves entirely to philosophy with but an occasional intrusion into the whirlpool of politics. (Cf. *Republic*, III. pp. 241-4.)

The method of teaching definitely recommended by Plato is the dialectic which had proved such a masterful weapon in the hands of Socrates and had led to the discomfiture of so many eminent sophists. There was indeed a particular reason why Plato so much favoured it. It was a favourite idea of his that all human souls had a previous existence, and that the knowledge imbibed in that existence is not lost to us in this existence. In the *Meno* especially he develops the notion of knowledge by recollection, a mythical explanation of which is vouchsafed to us in the famous vision of Er which forms the concluding portion of the *Republic*. The notion practically amounts to this that there is knowledge in every human mind, and education is only a means of eliciting it, and this is best done by the method of question and answer. The method has never been surpassed since the days of the great teacher of Athens and his pupil Plato. The whole doctrine of recollection is nothing but an elegant fiction, but this does not detract from the intrinsic worth of the method itself. I feel personally convinced that neither set lectures nor an extensive course of reading can ever come up in efficiency to the living clash of mind and mind that we find exemplified in the Socratic dialectic. The so-called direct method of teaching is but a faint exemplification of this. In putting forth

difficulties, in manifesting different shades of meaning, in forcing men to think, in making them alert of intellect, ready to argue and to detect flaws in arguments, there is no method which is half so good as the supple dialectic of Socrates and Plato. It is only the want of time and the cruel imperiousness of examination courses that make its practical application so difficult. But the method which we cannot employ in our ordinary lectures, can advantageously be cultivated in our debating societies and seminaries. Plato was always in raptures over the method. In the *Phaedrus* (I. p. 488) he goes to the length of saying that he alone is the right sort of man, "who thinks that even the best of writings are but a reminiscence of what we know, and that only in principles of justice and goodness and nobility taught and communicated orally for the sake of instruction and graven in the soul, which is the true way of writing, is there clearness and perfection and seriousness and that such principles are a man's own and his legitimate offspring," and such men alone he would call lovers of wisdom or philosophers.

Coming to the topic of the subject-matter of study we find Plato discussing education as comprising two main branches: gymnastic for the body and music for the soul. He literally believed in *mens sana in corpore sano*. He was very much impressed by the powers of endurance that the Spartans had on more than one occasion manifested, and he wished the citizens of his state to emulate the Spartan example. Men and women alike were to be subjected to a rigorous physical discipline, and he sought to achieve this end by imposing on them the rigours of camp life. Gymnastic comprised dancing and wrestling, the former conducing to the suppleness and agility of the muscles, the latter to the hardening of them. Wrestling especially was to be cultivated in a way which would prove useful in warfare, and he did not fail to direct that the left hand be practised as much for all things as the right, so that the loss of either arm might not cause any great inconvenience. (Cf. *Laws*, V. pp. 175-7.) He boldly declared gymnastic and horsemanship to be as suitable to women as to men. (Cf. *Laws*, V. p. 186.)

He aimed at producing Spartan vigour and Spartan courage in his state, but he was too true an Athenian to have rested content with that. An education whose end-all and be-all is the development of courage develops only a part of virtue and hence is essentially defective. He further recognised that an excessive cultivation of pure physique tends to make a beast of man, and therefore he sought to transcend the limitations of Spartan training by prescribing a strong

dose of music with the double object of developing the intellect as well as the character of his citizens.

Music in Plato is a wide term comprising the whole range of literature, art, science, and philosophy. There is a definite plan in the order of studies dictated by his distinction between knowledge and opinion. There can be no knowledge of things till we have understood the essence of their being, the ground of their existence, the nature of their interconnections. This alone is worthy of the name of knowledge. The rest is but mere opinion. The key to all knowledge is Ideas. The Ideas constitute the essence of the causal explanation of all things. Ideas are obtained by transcending the narrow limitations and unessential particularities of the various sense-objects. Hence so long as we confine our attention merely to the domain of sensation, we are simply in the domain of opinion; therefore the whole curriculum is to be so arranged as to begin with the concrete, and gradually pass on to the generalisations of the sciences and mathematics. Then comes the stage of correlating the generalisations of the various sciences. This stage is the highest or the dialectical stage, and the culmination of this stage is reached when the Idea of the Good as the all-comprehending, all-illuminating source of all things is grasped. In the realm of intellect the Idea of the Good occupies the same supreme position as the light of the sun occupies in the realm of vision. He who has attained the knowledge of the Idea of the Good has attained all knowledge, for he then knows the essence, the ground, the interrelation of all things.

Like all great philosophers the poetic soul of Plato felt the unity, the kinship of the whole universe. There may be gaps in the argument, but the conviction of Plato never wavered. With mystical fire he broke into lyric cries as he discoursed about the depth and the range of Ideas. In the crucible of Ideas concrete objects lost all their attraction, and though he could feel the beauty of earthly things and be thrown into raptures over the perfection of human form as displayed by a Charmides or an Alcibiades, he delighted most in the contemplation of the inward beauty of things and of men. "Beloved Pan, and all ye other gods who haunt this place, give me beauty in the inward soul, and may the outward and inward man be one." (Cf. *Phaedrus*, I. 489). So prayed Plato through the mouth of Socrates. The inward beauty of the soul is conceived as the harmony of the nature of man: wisdom controlling passions, courage working as the willing servant of wisdom, and justice reigning over all. This is the vision of the beauty of the soul, and this beauty Plato never tired of contemplating and singing in connection with the whole universe.

A soul like Plato was the German, Froebel. He too, as he rambled in the shady recesses of the Thuringian Forest was touched by the beauty of the kinship of all nature, and like a weary soul distracted by the conflicts of human life he dwelt with a loving fondness on the grandeur and unity of the universe, and sought to transplant this beauty and unity into the inward soul of man. "In Aller wirkt and schafft Ein Leben, Weil das Leben all' ein ein'ger, Gott gegeben." \* Owing to this kindred inspiration, Froebel's ideas on education are on a par with Plato's. Both believed in the natural endowments of the human mind, aimed at the harmony of the soul and sought its development through education.

Plato's curriculum begins with literature—the study of the poets, and of such poets only as sing of virtue, uncontaminated by the soft strains of sickly or voluptuous sentimentality. Gods and heroes must be presented as true virile virtuous individuals. Poets and artists generally who do not observe these conditions are to be banished from the state. Such is the doctrine of the *Republic*, reiterated in an unmodified form in the *Laws*.

This is the portion in Plato's scheme of education, which is most open to attack. His critique of poetry and the poets is unworthy of a man of his temperament and his breadth of outlook. Although in the *Lysis* he admits that "poets...are to us in a manner the fathers and authors of wisdom," (Cf. I. p. 62), in the *Republic* itself he plays a mere rhetorician and argues that poets are useless. They have neither been legislators, nor generals, nor inventors. They have contributed nothing to the improvement of mankind,—a sentiment which would make the ghosts of Homer and Dante tremble with wrath. And the confusion of Plato's ideas is by no means clarified, when he takes up the indefensible attitude of branding all artists and poets as mere imitators, who are thrice removed from truth. "There is an ancient quarrel between poetry and philosophy," he says, and it constitutes an idea which in spite of its flagrant absurdity has not by any means entirely died out. Every age has its fanatical puritans who think that the only way to make life moral is to make it dull, joyless, spiritless. From age to age the conflict between the dullness and fulness of life continues, and the pendulum swings backwards and forwards. Men have yet to realise that the highest morality is attained through fulness of life, and not by starving our æsthetic cravings.

Plato's idea that man's whole life is a course of education made him think that at every stage of his life a man's reading should be rigidly

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\*One life works and creates in everything, since all life has been given by a single God.



controlled. All art is not equally healthy any more than it is equally beautiful. There are books and pictures that cannot be fit reading for boys or youths, for as Plato says: "Of all animals the boy is the most unmanageable, inasmuch as he has the fountain of reason in him not regulated; he is the most insidious sharp-witted, and insubordinate of animals. Wherefore, he must be bound with many bridles; in the first place, when he gets away from mothers and nurses, he must be under the management of tutors on account of his childishness and foolishness; then, again being a freeman, he must be controlled by teachers, no matter what they teach, and by what studies." (Cf. *Laws*, V. p. 190.) All this is essentially healthy and reasonable. A man's whole life may be a course of education, and yet it need not at every stage be controlled by the ideas of nurseries and girls' schools. It would be a poor compliment to Plato's pedagogics if even after years of such strenuous discipline a man is not free, or cannot be trusted to browse at his ease among books of all sorts. Ovid's poems and Rousseau's Confessions may not be ideal text books for young souls to feed on, but a man's morality must have its foundation on sand, if it cannot withstand such a dose of reading. The attempt to wrap up a man's intellect in the woollen garments of censorship has always tended to blast budding genius. The Inquisition of the Middle Ages and the notorious Papal Index prolonging its sickening existence even in the twentieth century, are always like vampires pursuing the spirit of human independence and the freedom of the human soul. They have been the bulwarks of human superstition and human ignorance, and the poisoned breath of censorship has often quenched the fire of new and glorious thoughts.

But it was the misfortune of Plato that he never understood the full significance of human progress. He laboured under the pontifical fallacy of picturing human society as incapable of any healthy change, once it has attained a certain stage. As examples of this atrophy we have the Hindu society of to-day and we had the Europe of the Middle Ages. Plato's dissatisfaction with the states of his age made him a rebel against the petty conventions and the petty tyrannies of his age. But once he constructed his ideal state as in the *Republic*, or his second-best state as in the *Laws*, he developed marked conservative tendencies, which denote a cessation from movement. Once his ideals are realised he would put a full stop to the march of human spirit, and allow his citizens to live merely on the milk-and-water poetry which breathes no evil and feeds on panegyrics. There is a remarkable sentence in the fourth book of the *Republic*, which truly expresses Plato's full-blooded antipathy to any deviation from his ideal: "When modes of music change, the fundamental laws of the

state always change with them," (Cf. III. p. 113)—a saying profoundly true as a statement of fact, but Plato gave it a twisted conservative form by insisting that "any musical innovation is full of danger to the whole state, and ought to be prohibited." (Cf. *Republic*, III. p. 112). No wonder when the whole delineation of the ideal republic is completed, with naive simplicity Glaucon added: "You are a sculptor, Socrates, and have made statues of our governors faultless in beauty," (Cf. *Republic*, III. p. 245),—indeed faultless in every way except that it lacks the movement of life!

The reason for this extreme rigour of education has a twofold root. The first is the Platonic notion that children belong to the State rather than to their parents and hence they are to be brought up in the way best suited to the interests of the State (Cf. *Laws*, V. p. 186.) The second is a deep-rooted suspicion of individual vagaries, an idea that no man should be given an opportunity to deviate from the strict letter of the law. There is a palpable inconsistency between this idea and Plato's revolutionary suggestions. But this inconsistency is a human bias often illustrated in history. Plato's revolutionary conservatism, if such paradoxical language be allowed, is neither more nor less surprising than the religious persecutions of which the Protestants were guilty at the time of the Reformation even more than the Catholics. The mentality of Plato in this respect is on a par with the mentality of Calvin.

Plato's conservatism will also have to be judged by correlating with it his moral puritanism. The defects of a purely physical education he sought to remedy through knowledge. But he knew that "entire ignorance is not so terrible or extreme an evil, and is far from being the greatest of all; too much cleverness and too much learning, accompanied with an ill bringing up are far more fatal." (Cf. *Laws* V. 202.) Ignorance he vehemently despised, but moral chaos he absolutely detested. It was a settled conviction with him that there is nothing higher than morality; that the ideas of virtue and justice have an absolute validity independent of space and time. Morality he pictured as undeviating as the diurnal motion of the sun and moon. Morality is one, it is perfect; it is the very centre of the Platonic system and is made to control everything human and makes all men bend to its imperious will. To a man of such moral refinement the grossness of the Grecian mythology cannot but have been intensely shocking. Homer and Hesiod as the singers of these immoral divinities could not escape his wrath. The debasing influence of a wicked god cannot possibly be exaggerated. The animal passions of the Greeks found a refuge and a justification in such tales, for as Herbart astutely puts it "Men, if they

are not fond of carrying their maxims into practice, never forget to turn their practice into maxims." It was this tendency that Plato was vigorously combating, and on the whole under the limitations of the Greek mythology there was a great truth on his side. Where he failed was in universalising as a precept what was perhaps desirable in the case of Greece. Lesser men can afford to be provincial in their outlook. Poets and philosophers of the highest rank have to be universal in their appeal. Shakespeare's world-compassing immortality is not based on the chauvinism of his *Henry V*, and Dante's fame does not rest on the cogency of his *De Monarchia*. However inviting the poets of Greece were for a rigorous onslaught, and whatever justification Plato's critique of Greek poetry may have, it must be put down to the debit side of his genius that he failed to appreciate the true significance of art. All art has to be ultimately moral; but it need not be moral by putting on the garb of ascetic severity. He would betray a disappointing lack of intellect who would censure *Macbeth* as fomenting disloyalty, *Othello* as encouraging filial disobedience, *Anna Karenin* as fostering divorce, or *Vanity Fair* as delighting in the sharpness of Becky. The morality that Plato aimed at was the ghost that would flaunt its robes in a world from which evil had been banished. But even while noting this shortcoming we cannot but bend our knee in honour of that moral earnestness which was the inspiration of his metaphysics and politics alike. With a touching vehemence the Athenian stranger is made to say in the *Laws* (V. pp. 294-5): "I have spoken with vehemence because I am zealous against evil men; and I will tell you, dear Cleinias, why I am so. I would not have the wicked think, that having the superiority in argument, they may do as they please and act according to their various imaginations about the Gods; and this zeal has led me to speak too vehemently."

Having studied literature, the next topic is music in the usual sense of the term. This too is treated rigorously from the moral point of view. Only the virile martial tunes are allowed. The soft harmonies are prohibited. Then follow arithmetic, geometry, solid geometry and astronomy, i.e., those subjects which had more or less made some progress in Plato's time. The correlation of the sciences follows next in order; it is only when, according to Plato, "all these studies reach the point of intercommunion and connection with one another and come to be considered in their mutual affinities then, but not till then, will the pursuit of them have a value for our objects; otherwise there is no profit in them." (Cf. *Republic*, III. p. 234.) "The coping-stone of the sciences" is dialectic. Thus the dialectic is the all-comprehensive principle

of knowledge. The principle of an organic whole has been a commonplace in all idealistic philosophy and Plato never tires of emphasising it. The vision of unity marks every true philosopher, although the ordinary run of mankind fail to understand him and deem him mad. The vision of this single science is the vision of an all-pervading beauty. This emphasis on the oneness of knowledge makes for culture. Thus culture and character become the twin-gods of Plato's educational system.

Such is in brief outline the educational theory of Plato. Even after twenty-two centuries it has not lost its freshness, for the highest truths are always fresh. Where it fails it fails in its treatment of art. But even this defect pales before the moral lustre of his ardour. His treatment of boys and girls on a footing of equality, his reverence for them as the temples of reason, his recognition of their moral personality, the living flame of oral instruction, the unity of knowledge, and above all the emphasis on depth of character—these are his particular contributions to the educational theory, and they have a permanent worth, a universal application.

We are on much more debatable ground, however, when we come to discuss his theory of the relation of education to the state. There are two alternatives: education may either aim at the development of the individuality of each member of the state, or it may aim at making every man slavishly loyal to certain ideals. The latter has always been the deliberate aim of Catholicism, Hinduism, in short of every orthodox religion. It was also the aim of the German system of education during the half-a-century preceding the outbreak of the last war. Plato's educational system may also be regarded as belonging to that category. It conduces indeed to the stability of the ideals upheld, but mere stability inevitably tends to degenerate into stagnation, and few would care to deny that stagnation is a heavy price to pay for stability. The Catholic countries like Spain and Portugal are shorn to-day of all their old historical glory, and if Italy has once again taken her rightful place in the council of nations, it is due to the statesmanship of Cavour and valour of Garibaldi, who achieved the unity of Italy in the teeth of Papal opposition. The Hindus of to-day can bear no comparison to their glorious ancestors who created the Hindu civilisation, the hypnotising spell of which has not yet spent all its force. In the Mahomedans of to-day who could recognise the descendants of those stalwarts who overspread the East and the West, and fertilised the earth with the seeds of Saracenic culture? In the Germans of to-day who could recognise the victors of Sedan? If

historical analogies may be presumed to have a logical validity, we may safely surmise that the great Platonic Republic, created with infinite love and pain, would have soon degenerated into a body of goody-goody patriots or band of hypocrites. His extreme care to put down any discussion or criticism of the fundamental laws of the state; his fatal device of dictating to poets as to what they should write about and what form of versification they should adopt; his rigorous insistence on all the guardians being at least fifty years old, and continuing in their position till they are seventy—all these measures lead but to intellectual death, and intellectual death is but a grim prelude to moral decay and moral hypocrisy.

Plato failed to take these facts into consideration and this one fatal oversight vitiates the whole of his polity. His recognition of men with golden souls gave him a brilliant opportunity of so framing his educational scheme as to have made them great creative natures. But instead he was content that they should merely be brought to dot the i's and cross the t's of Platonic legislation.

If the ideal of eugenics is the betterment of the human race, education can have no other ideal, for its main function is to supplement eugenics. The aim of eugenics is not to produce a dead level of uniformity, of mere averages, but to maximise the richness of human individuality and that education will be pernicious that fails to take account of human individuality. Since this individuality can blossom only in human society, the intrinsic needs of society indeed condition and limit the development of individuality, but no farther than is absolutely necessary. Society may under certain conditions definitely limit human action, but no society has ever a right to limit the full development of human intellect as it manifests itself in the regions of literature, art, science, and philosophy. These are the regions where iron laws have no justification. There is no limit to exuberance of human intellect. The light and the true, the good and the beautiful will always live, and their age cannot be counted even in centuries. They are the standards of human civilisation; they are the instruments of progress, for great ideas are the levers to move men's souls, and great actions come only on the heels of great thoughts. That is why in the history of humanity the epochs of thought are also the epochs of action: the age of Pericles and Alexander; the age of Augustus; the age of Elizabeth; the age of the French Revolution; the age of Akbar; the age of the Caliphs of Bagdad. He would be a bold man who would venture to balance the claims of thought and action in these great epochs of human history.

## THE EDUCATIONAL IDEALS OF PLATO

Those eugenists who tend to emphasise heredity as the most dominant factor in human evolution dwell on the gushing exuberance of geniuses. Alexander began his conquering career at the age of eighteen; Napoleon at the age of twenty six was already the conqueror of Italy; Scipio faced the Carthaginians in Spain at the age of twenty four. Who could have taught them the art of warfare? Who could be such a fool as to teach prosody to Shakespeare and Milton, Dante and Goethe? Who would dream of dictating the themes of their novels to Scott and Dickens, Balzac and Hugo? It is a truism that creative genius cannot flourish in the close atmosphere of class rooms and books.\* The discipline of set lectures, prescribed courses and regular hours are not congenial to its free temperament. Geniuses guide their own reading; they roam at large in the library corridors and devour volumes after volumes as their fancy dictates. Or they are content to study the great book of life directly. Universities can produce scholars by scores, but no geniuses. It would be rash however to deduce therefrom that education has no worth. With the rank and file it is of tremendous importance. It guides their lives, moulds their characters, makes them useful honest members of the great army of workers, without whom the genius of leaders would be but an empty name. Plato was well aware of the complementary nature of education. He recognised in it the completion of eugenics. But, as we have seen, the fatal defect of his scheme was a rigidity that left no scope for the development of individual genius. It was over-weighted with authority, and whatever charms authority may have for those whose whole outlook on life is dominated by ideas of dignity and superiority, it kills all freshness, all joy. The dull routine becomes the shroud of death. In an atmosphere like this we can breed but a race of pigmies, a race of men so hypnotised by authority that they lose even the capacity to recognise and appreciate greatness. When all is said and done Plato's educational theory is a faithful image of his state in its strength and weakness. Immensely fruitful in details, the whole presents an appearance of austerity, of rigid formality, of puritanical severity.

We should just like to dwell for a while on a criticism which has often been passed on Plato and the Greeks generally by Christian writers that benevolence and charity were virtues they were ignorant of. The criticism is unjust since the very conception of the Platonic state leaves no room for benevolence and patronising charity. In a community where no beggars could exist, and where every citizen is equipped with the economic means of subsistence there can be no charity.

Far from being a weakness, it is a strength, and it is towards making the life of every citizen self-supporting and respectable that the modern state is moving. This fact alone is a sufficient refutation of the criticism. Christianity has been credited with the formulation of the Golden Rule, but Plato had anticipated it by three centuries. In the XIth book of the *Laws* (V. p. 299) occur the memorable words which constitute so much of morality: "Thou shalt not, if thou canst help, touch that which is mine, or remove the least thing which belongs to me without my consent; and may I be of a sound mind, and do to others as I would that they should do to me."

Comprehensively seen, eugenics is coeval with politics, and education becomes but a branch of eugenics. It can be of use to eugenics, if it can be made the instrument of spreading and realising eugenic principles. Legislative compulsion in the matter of birth and marriage is not desirable, and under the present state of eugenic knowledge it is not even to be thought of. But it is not impossible to make men think for themselves and think in terms of the society. Society is the visible symbol of human immortality. A man's duty to this society is not exhausted by his mere obedience to the laws. He has to contribute to that immortality of good life by his own offspring. He has to contribute to the health of the society by regulating his married life on eugenic principles. He has to contribute to the morality of society by educating his children to develop into moral personalities. It is only then that education will truly make for the achievement of the eugenic ideal. Plato trusted too much to the wisdom and the authority of the guardians. The only salvation, however, for humanity is to see that each man is so brought up as to realise the importance and worth of his own mission in life and this is the great task that education has to perform. Reverence for society and its needs, freedom for the development of geniuses: both these ends must be served by the highest educational ideal. He who can synthesise these two will be the maker of future humanity. Plato started the whole train of thought. But the last word has not been said, and will not be, till a genius arises who can show how evil innate endowments can best be modified, and how good innate endowments can best be fostered by education. Education may yet take its start from eugenics and the future of humanity will mark a new chapter in the history of the universe, and in the brilliant galaxy of the makers of humanity Plato will take his place as the founder of eugenics and pedagogics: the two great levers of human progress.

A. R. WADIA.

## TWO BOOKS ON ANCIENT INDIAN PHILOSOPHY. \*

### I

ANY work on an Oriental subject from the pen of a scholar and critic of world-wide fame like Professor A. B. Keith is a boon to Sanskrit students, and especially one on the *Karma-Mimansa*, of which no Western scholar has yet given us any critical exposition. The object held in view by the General Editors of this series is to enable the "educated Indian, whether rich or poor, to find his way into the treasures of India's past." One of the best selections for this end is the *Karma-Mimansa*. The *Karma-Mimansa* is a name given to the Sūtras of Jaimini, which deal with the methods of interpreting the Vedic and Brahmanic texts with reference to the sacrificial rites that are enjoined therein. As contrasted with the *Karma-Mimansa* there is also Bādarāyana's *Brahma-Mimansa*, known also as *Sariraka-Mimansa* in Sūtra form, dealing with the methods of interpreting the Upanishads with reference to Brahma, the Universal Soul, and Jiva, the Individual Soul.

Short as is the book, it is very comprehensive. Together with the system of philosophy which the Mimāṃsakas have expounded quite independently and distinctly from all other philosophic systems, almost all the important logical principles of interpretation used by the Mimāṃsakas in elucidating the ritualistic texts are briefly noticed in the book. The book is divided into six chapters; (i) The Development and Literary History of the *Karma-Mimansa*, (ii) The Problem of Knowledge, (iii) The World of Reality, (iv) God, the Soul, and Matter, (v) The Rules of Ritual Interpretation, and (vi) The *Mimansa* and Hindu Law.

Long before the compilation of the *Mimansa* Sūtras by Jaimini, the word *Mimansa* in the sense of discussion is found used in the Brahmanic writings. As Jaimini refers to and criticises the views of the Nyāya and Vaiśeṣika schools of philosophy, which are believed to have existed about the beginning of the Christian Era, Professor Keith assigns the *Mimansa-Sūtras* to the first or second century A.D. and considers them to be not later than the second century. Before Śaṅkara wrote his

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\* 1. *The Karma-Mimansa*. By A. Berriedale Keith, D. C. L., D. Litt.

*The Heritage of India Series*, Association Press, Calcutta.

2. *The Spirit of Ancient Hindu Culture*. By Manganlal A. Buch, M. A., Baroda.

Issued by the Author.



commentary on the Sūtras, there was another *Vṛtti* or commentary on it, probably by Upavarsha. Sabara probably lived about 400 A.D. Bhattachakumarila about the 9th century A.D. wrote his commentary on the commentary of Sabara. Side by side with Kumarila, Prabhakara, known also as Guru, wrote his commentary called *Bṛihati* on the same sūtras. Though agreeing for the most part, these two commentators differ in their views on many matters. They became the heads of two distinct schools, the Bhatta school and the Prabhakara or Guru school. Except a few works by Salikanatha following the views of Guru, other works of this school have not yet come to light. Among the followers of the Bhatta school, Ramakrishna Bhatta, Sankāra, Dinakara, Kamalakara, Khandadeva (1665 A. D.), Ananthadeva, and Apadeva, are all famous by their works

The second chapter deals with the theory of knowledge. According to both the schools of the Mimamsakas, all cognitions are valid provided there is nothing to render them invalid. When mother of pearl is mistaken for silver, even the mistaken cognition is at the outset regarded as valid; but when it is found not so serviceable as silver, that previous cognition is taken to be invalid. Concepts formed by perception, i.e., by seeing, hearing, tasting, smelling, or touching, are all valid. Likewise syllogistic inference is also valid. Concepts based upon analogy, verbal testimony, or presumption are also valid. While Kumarila regards negation as an independent valid proof, Prabhakara rejects it as a proof. The doctrine of fallacies is also well explained. What differentiates the theory of knowledge of the Mimamsakas from that of other philosophical systems is the view held by Jaimini on verbal testimony. According to him there are two classes of sentences, secular and sacred. Secular sentences are valid and reliable only when they are found to be in harmony with categorical proofs such as perception, inference, and the like. But sacred sentences like those of the *Vedas* are all self-evident, and require no categorical proofs to be valid. The reason adduced for this view is that language is eternal and self-existing. It is the creation of no human being, unlike proper names. The connection between words and their meaning is also eternal. As the *Vedas* are fathered upon no human being, they must necessarily be eternal (*apaurusheya*) and whatever is enjoined in the *Vedas* must therefore be valid and reliable. Hence the rites laid down in the *Vedas* are believed to be capable of bringing about the end assigned to them. What the *Vedas* teach is action or performance of rituals, but not the realisation of self-existing Brahman. Hence whoever follows the Vedic teaching is required to undertake sacrificial performances, but not to sit contemplating on the nature of

Brahma (p. 39). In the view of the Mimansakas, *Dharma* means an act, and the incentive to *Dharma* or a good act is *Vakyartha* or the meaning of an imperative sentence according to some, of imperative suffixes according to others. So far as secular or social acts are concerned any act that is agreeable to *Vriddhavyavahara* the opinion of the elders in society is termed *Dharma*. As regards religious acts, whatever has been enjoined in the *Vedas* and the *Brahmanas* is a *Dharma*, a good act. It follows therefore that whatever is opposed either to *Vriddhavyavahara*, i.e., social conscience, public opinion, or to the *Vedas* and *Brahmanas*, is *Adharma*, a bad act. Though desire (*raga*) and utility (*prayojana*) are main incentives to work, still without public approval no man undertakes a work, however useful and desirable it might be from his individual point of view. This is one of the most important ethical principles established by the Mimansakas in their commentary on the second Sutra of the first chapter of the Mimansa Sutrās. Professor Keith has briefly noticed this point (p. 39) and has not taken the trouble to elucidate it, perhaps for want of space.

The third and fourth chapters deal with one of the most important problems of the Mimansa philosophy. It is impossible to exaggerate its importance to us, the Hindus, and especially to the Brahmins. It is the reality of the world's existence *without a creator*. The Mimansakas of both the schools boldly deny the existence of a Creator; nor do they expect to have rewards at the hands of a Creator, God, or Divine Being, for their religious or sacrificial acts. There is no evidence, they say, to prove the existence of a Creator. All sense-perceptions, such as seeing, hearing, tasting, smelling, touching, fail there. The mind cannot reach it, if there be any such existence. Where perception fails, inference, analogy, and presumption cannot step in, for these latter are based upon the former. Nor do the *Vedas* (the *Smāhitas*) and the *Brahmanas* ever speak of it. Those Vedic sentences which appear to refer to an omniscient being, as in the sentence "The Omniscient is He who knows all," are all laudatory sentences (*Ārthavāda*), used to praise the particular sacrificial acts connected with them. They are not imperative sentences and therefore they convey no meaning by themselves. As to the *Upanishads* which speak of Brahma or a Creator or a Destroyer, they have nothing to do with the *Vedas* and the Vedic rituals. Thus the Mimansakas agree with the Jainas, and the Buddhists in denying the existence of a divine Creator. But they believe in the eternal existence of an *Ātmanā*, soul or self, who is destined to enjoy or suffer from the consequences of his good or bad acts. Accordingly to the Mimansakas there are other worlds, a heaven and a hell.

To the Mimansakas the world is real, and neither created nor entirely destructible. Things of the world and on the world may appear and disappear, ever undergoing change. But as a whole the world is neither created nor destroyed, for there is no evidence to prove such *strishti* (creation) and *pralaya* (destruction). Here the Mimansakas have a drawn battle with the logicians who believe in the creation and destruction of the world and in the existence of a Creator, a personal God; with the Advaitins in whose view the world is phenomenal and the Self or *Brahma* is the only real entity; with the Idealistic and the Nihilistic schools of the Buddhists, who consider the world either as an idea like that perceived in a dream or as a void.

To the Mimansakas there is no deity to reward them for their sacrificial acts. The sacrificial acts themselves produce an *Apurva* or potency which brings them the promised reward, such as *Svarga*, heavenly bliss, or sons, cattle, knowledge and the like.

It is only the imperative sentences such as "*Jyotishtomena svargakamo yajeta*," "Whoever is desirous of *Svarga* should perform the *Jyotishtoma* sacrifice," that are important in the Vedas. The rest are to be interpreted along with such main sentences according to the context. They are all laudatory of the particular acts enjoined. It follows therefore that the description of the origin of castes from Purusha's face and other limbs has no meaning by itself, but is only laudatory of the Purushamedha sacrifice, with which the whole hymn is connected.

Such is the spirit of the *Mimansa* philosophy. It is not Professor Keith's object to deduce the corollaries rightly deducible from the propositions clearly established by Jaimini and his followers.

In the fifth chapter the rules of interpretation of the *Vedas* are explained, and the distinction between injunctions and laudatory texts (*Vidhi* and *Arthavada*) is also pointed out. Texts that enjoin sacrificial acts are called *Vidhis*, and laudatory texts are regarded as secondary and as having no meaning of their own apart from the *Vidhi* texts. Various forms of *Vidhis* or injunctions are also clearly explained.

In the sixth chapter the application of the *Mimansa* rules of interpretation to the interpretation of *Smriti* texts on Civil Law is elucidated. Following Vijñanesvara and other commentators on *Smritis*, who have successfully applied *Mimansa* principles of interpretation to *Smriti* texts, and interpreted the rules of inheritance, adoption and other customs in consonance with the progressive spirit of their own times, as shown in the few instances mentioned by the learned Professor, distinguished Hindu legal practitioners throughout India are

still making use of the *Mimansa* principles of interpretation in contested adoption and other civil cases.

There is no doubt that with such useful application, the system of the *Karma-Mimansa* philosophy is an interesting field of study. Students of *Karma-Mimansa* know very well how difficult it is to master the science of *Mimansa* and how like Logic, Grammar, and *Vedānta*, it is classed as a separate branch of study by itself. Except Apadeva's *Mimansa-Vyayaprakasa*, which treats of the elements of the *Mimansa* principles, following the Bhatta system, there has been up till now no standard work dealing concisely with the doctrines of *Mimansa*. This want Professor Keith has admirably supplied. Every sentence and every paragraph in this charming little book is pregnant with information. The skill which the Professor has shown in bringing so much information into such a short book is really admirable. Especially interesting is the lucid description of the views of the Guru school as distinguished from those of Bhattakumarila. As an excellent and authoritative text-book of the *Karma-Mimansa*, this book can very well replace Apadeva's *Mimansa-Nyayaprakasa* in all the colleges of Indian Universities.

## II

In his book, Mr. M. A. Buch presents to us a vivid outline of the ideal held in view by the ancient Hindus in building their society upon a religious or spiritual basis as contrasted with what he regards as the material basis of European civilization. The book consists of seven chapters: (i) The East and the West, (ii) A Comparative Study of English and Sanskrit Literature, (iii) The Hindu Ethical Attitude, (iv) Ancient Hindu Politics, (v) Hindu Theology, (vi) Hindu Metaphysics, and (vii) The Doctrine of Advaita.

In contrasting the culture of the East with that of the West, he says in the first and second chapters that "while the West is Materialistic, the East is Spiritualistic." In support of this assertion he quotes from the *Upanishads* and other religious literature of the Hindus a few passages extolling Nivritti or renunciation of the world and worldly activities as the ultimate good, and contrasts it with the wonderful industrial activity to which the West is devoted. No doubt it is a fact that the ancient Hindus took as much delight in writing volumes after volumes mostly upon religion and philosophy as the Westerners upon science and industry. The reason for this is not that the ancient Hindus had no interest in science and industry, but that the natural and mechanical sciences were not known in those days. Had

these sciences been known in those days as now, a proportionately large quantity of scientific literature would have sprung up. Anyhow it is against reason to infer that those who have written mainly upon religion lived a religious life, and that those who have devoted their attention to science and industry were entirely materialistic. Precept tends to differ from practice, for precept follows an ideal while practice is subject to human weakness. Hence it appears wrong to conclude that, because a nation's literature is mostly religious, that nation has lived an entirely religious life, and that a materialistic tendency is the characteristic of nations devoted to industrial undertakings. Accordingly the statement made by the author that "the East has cast its die for a life of perfect repose in the bosom of the Infinite, for a life of eternal contemplation and eternal enjoyment," is far from true. The East may be more pious and religious and less industrious than the West. Still it cannot be said that the East has abandoned all activity and the struggle for existence. The inter-state wars that disturbed the peace of India during the pre-British period and the uninterrupted political agitation that has been going on throughout the length and breadth of India ever since the great Mutiny are clear signs of human struggle for earthly blessings. Herein lies the variation of practice from precept. The pious and philosophical precepts contained in the *Upanishads* and other religious works of the Hindus are the outpourings of either a contented or a disappointed heart. They are never the symbols of actual life.

Similarly Longfellow's call "to act that each to-morrow find us farther than to-day" cannot be taken to be the expression of the feeling of a merely industrious or materialistic nation. Its utterance is no louder than Bhartrihari's teaching that "The Goddess of Wealth marries the industrious."

Considering the zeal with which numbers of hospitals, schools, churches, orphanages and other charitable institutions are built by Western missionaries with funds subscribed for the purpose by their own men and women in their own country, we may as well argue that the Western peoples are as pious philanthropists and philosophers as the Buddhists once were. Neither mere literary evidence nor monumental evidence is enough to show the inward tendency of a people. The reason why the ancients devoted their attention solely to religion and philosophy is that the practical study of man and nature did not dawn upon their mind at that time. Hence the prevalence of monotony in ancient literature as contrasted with the variety of topics in modern literature. With the advance made in the study of the natural sciences

and of sociology based upon deductive reasoning the topics that confront modern writers are very many. Scientific, humanitarian and economical subjects did not so much appeal to the mind of the ancients as religious and metaphysical subjects. Hence the dearth of scientific literature in olden days and of religious literature in modern days. From this it is not safe to conclude that ancient nations whether in the East or in the West were entirely religious and that moderns, whether in the East or in the West, are irreligious and materialistic. Hence the conclusion arrived at by the author in the first two chapters that as contrasted with the West, which he regards as materialistic both in its life and in its literature, the East in both precept and practice is spiritualistic and devoted to the one spiritual goal, Brahma, cannot be accepted.

His views on the Hindu ethical attitude are equally based upon precept instead of practice. According to the Hindu philosophical systems, the highest good or *Dharma* that man must observe is realisation of Brahma as the only real entity. Realisation is merely a mental labour and as such it requires no physical labour of any kind. Accordingly all activity is *Adharma*, to the Hindu philosopher. In the words of the author himself (p. 109) "the Absolute is attained not by crores of pious deeds, but by thought and knowledge." Logically this doctrine may be perfectly reasonable; but practically considered, it has no charm for humanity as a whole. As a being of feelings and passions man is more attached to worldly happiness than to heavenly bliss. The author himself says (p. 110) that "ethics, therefore, like economics or logic may claim the attention of people whose imagination is dazzled by the glamour of finite happiness. But for the philosophic few metaphysics was the only refuge and support." Truly philosophy is meant only for the few, never for the majority. The majority of the people all the world over are interested in having a moral code which in the words of the author (p. 110) is "concerned with matters of expediency; its operation is strictly pinned down to the empirical sphere, to the phenomenal plane, to the *Vyavaharika* stage. It is one of the worldly sciences which are more conducive to the success of earthly goals than heavenly ones. Morality can secure success in this life, it can guarantee happiness in future life, it can even gain access to paradise—the world of gods and angels."

Now the question is: have Indians ever been, and are they now, of the type of the few thus praised by the author? No one can deny that from the dawn of the Vedic period down to our own times the majority of the people of India have preferred the moral code of the

*Vyavaharika* stage to the philosophical code which is based on the principle that Brahma alone is real and the rest phenomenal. If so, where is the difference between the East and the West, so far as morality is considered? As regards the ideal of the philosophic ethical code, India is no exception. There are a few in the West also whose faith is quite similar to that of the Advaitins of India. Besides, the philosophical ethical code is not the only system that is followed in India. There is the *Karma-Mimansa* code also, which is followed by the majority of the Hindus and which in many respects is quite similar to the moral system of the western people. According to the ethics of *Karma-Mimansa* and *Dvaita* philosophy it is action rather than contemplation that has been enjoined upon man.

The picture drawn by the author of the ancient Hindu political institutions is as imaginary as his sketches of culture and morality. What has been described as an ideal monarchical institution in the *Ramayana*, the *Mahabharata* and other epics is usually mistaken for an actual historical fact. Long life, absence of premature death, drought disease, famine, and other calamities, the altruistic life of kings like Rama, Krishna, and others, and the asceticism of ministers such as Vasishtha, Dhaumya and others are not historical facts. The elegant and sweet verses which the author has quoted from the *Mahabharata*, *Manu*, and other works in evidence of the altruistic life of ancient Hindu kings and their unselfish administration of their kingdoms only for the good of their subjects can as well be contradicted by passages found in the same works, wherein treachery of kings and ministers, murder of princes, outrage and abduction of women, oppression and slaughter of people and other cruel deeds are vividly described as having been committed by Duryodhana, Ravana and others.

The *Mahabharata* verse quoted by the author (p. 150) in proof of the unselfish character of ancient Hindu kings like Rama gives rather a poetical exaggeration than a fact. To believe that ancient Hindu kings obeyed Manu's injunction to avoid treacherous means in fighting with their enemies is to bid good-bye to all history. A political expedient which all ancient kings, whether in the East or in the West, frequently made use of was the justification of the means by the end they had in view. Sometimes even the end held in view was as bad as the means employed. A cursory glance over the contents of the *Arthashastra* will show that ancient governments were not as good as the author represents them to have been.

In the last three chapters "Hindu Theology, Metaphysics and Advaita" are disposed of by the author in a few pages. He considers

image worship as an indispensable means for the religious culture of the uneducated. In his treatment of Hindu Metaphysics his translation of such technical words as *Atman*, *Buddhi*, *Antahkarana* by such English words as *self*, *intellect*, *conscience* seems to be vague. *Self* and other words do not convey the same idea that is given for *Atman* and other words in Sanskrit. The author's exposition of the *Advaita* philosophy is so brief that it is not possible for the reader to understand what is really meant by *Advaita*.

The renunciation of the world followed by the realisation of *Brahma* as one's own self is an ideal which is very hard to follow practically in culture, ethics, religion, or government. The Buddhistic *Nirvana* as an ideal proved a failure. So did the Jaina ideal of *Tirthankara*-hood. The rigid and strict discipline and self-denial which an Advaitin, a Buddhist, or a Jaina saint has to observe in seeking the promised goal is so impracticable that those three philosophical systems have all remained merely theoretical. But whether practicable or impracticable, the ideal set forth in this book is so charming and edifying that the reader cannot but feel himself elevated to a tranquil and peaceful region far above the storms and whirlpools of the earth.

R. SHAMA SASTRI.



## THE MINISTER UNDER THE NEW ACT.

THE irresistibility of democracy is now past the controversial stage. It is but human nature that the people of a country should demand the right of ruling themselves. It is equally true that once a people demand the right of ruling the country for themselves no counteracting force can succeed in preventing the people from gaining what they demand. As Sidgwick truly says, the people of a country—whether of Russia, India, or Japan—are the unconscious sovereigns of their respective countries. But the real difficulty lies not in demanding self-rule, not in securing self-rule, but in rightly and advantageously utilising that privilege. The level of education among the masses and the temperament of the people (especially of the leaders) count for much here. To obey laws and orders requires less self-control, less intelligence, and less public spirit than to initiate and make laws, to issue and enforce orders.

The British Empire in India rapidly developed the unity of the Indian nation. On account of the Empire ranging over the whole of India narrow views and local patriotisms soon gave way. Education began to widen the horizon of the Indian. The result of all this was that the time-honoured idea of Bharatamatha became fully rejuvenated. Along with this spreading idea of nationality among the Indians, a growing desire of the Indians to share to a larger and larger extent the responsibilities of government with the British rulers in India became apparent. With the object of bringing in a more representative system of government, the Minto-Morley Reforms of 1909 were ushered in, whereby Indian views were given more representation in executive and legislative councils, and local self-government—that is, administration of municipalities and local bodies by elected Indians—was largely developed.

A few years after this the Indians desired that the British Parliament should go a step further by modifying the Indian constitution—the framework of government—in such a manner that Indian statesmen elected by Indian voters should actually govern the country. The final result of deliberations upon this further democratisation was the Government of India Act, 1919, and the rules thereunder. The British Government have through their prime minister declared that their policy in

regard to India is to offer full responsible government (*i.e.*, full self-rule or autonomy) to Indians just as they have done to Canadians, Australians and South Africans. And this Act is offered as the first substantial step. The system of government introduced by this Act is called Diarchy because government will hereafter be carried on by two more or less independent bodies—the governors and governor-general with their executive councillors; the provincial legislative councils led by ministers. In very brief terms (further amplification is not necessary because the main features of the Act have been explained very well and very widely by many leaders and the Publicity Bureau), the 1919 Act provides for a substantial advance in Indian representation in the “Central” (*i.e.* Imperial) department and in the “Reserved” (*i.e.* Provincial) department, which will be administered as hitherto by the governor with the assistance of executive councillors appointed by the secretary of state; and provides for “parliamentary” government in “transferred” subjects or departments. Parliamentary government is government carried on, not by the governor assisted by the executive councillors, whose appointment and dismissal are vested in his hands (it is he who recommends either), but by the governor “guided by” the “ministers” who command the majority in the provincial legislative council. “The legislature, or it may be the elective portion thereof, appoints and dismisses the executive, which under these circumstances is in general chosen from among the members of the legislative body.” (A.V. Dicey). So it can be seen that so far as concerns the departments which are hereafter to be administered by ministers, supreme power over the departments and ministers is vested not in the hands of the governor, the governor-general, or the secretary of state for India, but in the hands of the provincial legislative council. The wording of the Act is not of this import, but the Act allows conventions to develop in India just as they have developed in England. According to the Act the provincial legislative councils will contain a very high percentage of elected members. For example in the Madras Legislative Council elected members number 98 and nominated members number 29. Hence the majority in the legislative council must be composed of elected members, and the ministers must command the support and confidence of the majority. In other words, candidates who command the confidence and support of voters according to the 1919 Act and rules thereunder constitute a high percentage of the provincial legislative council members. Out of such elected members those who command the confidence and support of the majority of the legislative council will necessarily be called upon by the governor to “take office”

as ministers and carry on the business of the respective transferred departments. Therefore the actual choice of ministers lies in the hands of the legislative council and not in the hands of the governor. Suppose the governor appoints as ministers men who do not enjoy the support of the majority of the legislative council. What will happen? The legislative council, finding that its leaders have not been given charge of working the departments, will continuously oppose the ministers, and any bill brought forward by the ministers will be defeated: the majority of the council will vote against it. If all bills brought forward by the ministers fall through like this, government work cannot be carried on at all. It is true that the Act gives the governor power to pass a measure into a law. But this power is subject to approval by the secretary of state, and in addition the Act intends that the governor should make very rare use of this privilege. So, generally speaking, neither can the governor appoint whomever he likes as minister, nor can he override the wishes of the legislative council and the ministers. The governor might advise, but if the legislative council and ministers persist in a particular course of action, he has to give way, hoping for the betterment of the council by actual experience. All this is with regard to transferred subjects in the provinces.

Such a system is what obtains in the United Kingdom and the self-governing dominions, and the Government of India Act of 1919 provides for this sort of government in transferred subjects—Industry, Agriculture, Education, Sanitation, Co-operation, Registration and a few more. After the elections to the provincial legislative councils are over the elected members meet under a President (to be nominated by the Government of India for the first four years, but afterwards to be chosen from amongst themselves by themselves). The governor, after studying the composition of the council, calls upon a number of men out of this body to take up the administration of the various transferred departments. Such men consult their fellow-members and their own capacity to lead a house (a legislative body); and if after such deliberation they feel that they can manage to secure a majority in the legislative council to support them in their administration, then they communicate their willingness to accept ministers' places. After hearing of their consent to take office, the governor formally announces that they are appointed ministers for their respective departments. During the first few years the governor will have to judge very cautiously as to the members of the legislative council who may be capable of leading the house. The reason is that as things stand there is no well-developed and healthy party system. With a short period of

parliamentary experience a good party system may be organized, and then of course the governor will be a formal appointer of ministers, the actual selection being made by the majority party in the legislative council.

There is no arrangement according to the Act for a prime minister-ship such as exists in England, and in the early years of the reformed councils joint responsibility will be difficult to arrange for. But without joint responsibility (i.e. obligation to pursue a consistent policy as among themselves, and a readiness to resign in a body if censured or disapproved by the majority in the legislative council) the ministers will not be able to wield much influence in their relations with the governor, nor will the legislative council have much power over the ministers. In the first case the governor, when faced with the possibility of the resignation of all the ministers together, will have to think long and carefully before exercising his power of legislation or veto. And in the second case the legislative council will not be able to locate responsibility for acts if there be no joint responsibility. But it is for the first appointed ministers to develop the custom of joint responsibility. With this end in view they will have to choose as their chief one from among themselves, and create conventions in regard to the relations between the chief minister and others. Gradually the chief minister may secure the power of nominating his colleagues, as in England, for the governor formally to appoint them.

In the early years of the new government the ministers will have to use much of their capacity for argument in persuading the governor to put his power of passing laws into disuse as far as possible; for if the governor makes frequent use of his legislating power the intention of the Act will be defeated. The minister's persuasion and the secretary of state for India's power of approving or disallowing must combine to put the governor's power of legislation into disuse.

There has been a large amount of controversy with regard to the financial relations between the central and provincial governments. In this controversy it is for the ministers to show how the transferred subjects are in very urgent necessity of speedy expansion, and how therefore the provincial governments will require far larger revenues than hitherto they have received.

Again, with regard to the allotment of revenues as among the several transferred and reserved subjects, the chances are that on the one hand the executive councillors and governors may try to magnify the needs of the reserved departments, and on the other hand the voters may claim more than a justifiable budget allotment for transferred

subjects. Here is what the Bengal Liberal League says:—“The National Liberal League observes that while Bengal is prepared to tax itself to meet additional expenses on the development of transferred departments, it objects to the imposition of taxation for ordinary administrative expenses, especially those of the reserved departments.” The ministers in such cases have to do their best to bring down both sections to reasonable demands.

The other evil against which ministers have to guard is the pernicious effects of the spoils system. Supposing in an election the party X wins the majority in the legislative council, it follows that the ministers will belong to that party. If the new ministers like they can remove many capable and useful officers and fill up the vacancies with men of their own party. In such a case there will be immense harm done to efficiency. If people like Lord Kitchener and Lord Birkenhead (the Lord Chancellor) were to be removed to make room for party men it would merely mean degeneration of efficiency. Recently in Italy a non-party man was appointed Minister for Education on account of his literary genius and enthusiasm for education. In this manner ministers will have to resist their supporters' demand for office. Again, it will be for them to see to the good treatment of European officers serving in transferred departments.

Thus the work to be done by ministers is very arduous—work among themselves, with the executive councillors in charge of reserved subjects, and with the governor. But still more arduous and weighty is their work in the legislative council, because at the same time they have to get their power from that body, advise and guide its deliberations, warn it, if necessary, against harmful and irresponsible legislation, and in very grave emergencies advise the governor to dissolve the legislative council and hold a re-election.

Indians, generally speaking, are very imaginative and excitable by nature. Here they resemble Frenchmen. “The French are incorrigibly idealist,” says Sisley Huddleston. If a legislature contains men who allow themselves to be carried away by vague theories and flights of oratory, then surely ministers cannot long command the confidence of such a legislature, because no consistent policy is pursued by it. French cabinets are very short-lived compared with English; they are popularly called “quick-silver cabinets.” Such quick changes in government result in frequent changes in policy, and cause a large amount of embarrassment and expense. A similar fate may await the Indian administration unless ministers espouse the cause of practicality. While the legislative council may clamour for a particular law, having been led away

by exciting speeches and theories, it will be for the ministers to make practical facts, difficulties, and expedient measures stare the council in the face. The temperament of the people can to a large extent be counterbalanced by the effects of right education, and it will be for the ministers, to a large degree, to educate the legislative council members in the methods of useful and just legislation.

Any movement at the start tends to over-reach itself and go to such extremes as it would not approve of in later stages. A democracy is to a certain extent destructive at the beginning. In Magna Carta the Runnymeders went further than the present constitutionalists would go. They provided that if King John infringed any of the clauses of Magna Carta, a band of knights must immediately occupy his private property, thus forcing him to retract. Magna Carta as signed by John contained many vague clauses, and it was very easy to prove that the King infringed some clause or other. This power of reprisal was removed when Henry III became king. The Reformation and the Long Parliaments showed the same tendency. In like manner new privileges may lead the new legislative councils to revolutionary legislation and radical measures in transferred subjects. Their acts may lead to frequent dissolutions and deadlocks (situations where the legislative council and the governor both prove unyielding, and work is at a stand-still or goes on very slowly after complex arrangements). For example, the legislative council may pass some measure affecting a transferred department, which the governor thinks unwise. He will use his influence and try to persuade the legislative council, asking them to reconsider the measure. Suppose the council persists in its policy. The governor may dissolve the council. Suppose the same members are returned to the new council by the voter, and they again pass the same measure. Then the governor will exercise his right of veto. Suppose that on this veto the ministers are compelled to resign by the legislative council, and no other member of the council can accept office on account of the council's opposition, then the governor has to give way. The proposed measure becomes an Act. But it will be for the ministers to avoid frequent occurrence of such huge waste of energy and money, as also loss of cordiality and good relations. It will be for them to try hard for moderation and conciliation.

In the very nature of parliamentary government, which is introduced in the transferred subjects, there is a defect. "The administration of affairs is apt to reflect not only the permanent will but also the temporary wishes or transient passions or fancies of a parliamentary majority or of the electors from whose goodwill the majority derives its authority."

(A.V. Dicey.) This defect will be more dangerous where there are no second chambers. Second chambers like the Senate of the U.S.A., the House of Lords of England, and the Council of State of the Indian Imperial Legislature do act in delaying, postponing, moderating, and sometimes frustrating measures passed by the lower houses. But in the Indian provinces no second chambers have been provided for. No doubt the governor is vested, according to the Act, with a number of powers to moderate, restrain, delay, or postpone legislative council measures. Yet the ministers will have an onerous duty in making the council avoid haste and fancy.

In the early years of the reforms a party system on sound lines must develop if parliamentary government is to succeed at all. Just now so many interests—for example Mahomedan, Non-Brahman, Commercial, Anglo-Indian, European, Depressed Classes, Sikh—have been provided with reserved representation in the legislative councils that an important authority like Lord Meston wonders whether a people that demands representation in such narrow spheres will be amenable to rule by majorities, which is the essential feature of democratic rule. But this fear will be removed if within a few years the ministers organise a good party system, with a few well-marked parties advocating important policies and dividing on important issues. The ministers will have to share the great task of disciplining the members, for without discipline party organization is impossible.

In addition to all this the ministers may well expect a certain amount of apathy in the council. There may be a number of members who, on account of private business, laziness, or absence of interest in the measures discussed, may absent themselves often from the sessions. The ministers, along with other leaders, will have to rouse such members, and convince them of the responsible work on their shoulders.

Among the voters there are certain to be a large number who will not take the trouble to register their names and vote in elections. Even in such an educated constituency as that of the Madras University the number of voters who have actually enrolled themselves is very small compared with the number of men who are eligible to enrol and vote. It will be the duty of the ministers, along with other leaders, to "stump" the country, and impart sound political education to the masses. Speeches in the vernacular will have much effect in this work.

Just as is happening in the case of the Dominions, it will be the ministers who will have to represent provinces in all-India conferences, and often represent India in imperial conferences. They will be greatly responsible for raising the prestige of India in imperial and international relations.

No far an account has been given of the ministers' work in various fields. The original according to which parliamentary government will be introduced into India is the British system. In that system members of the cabinet are "(1) members of the legislature, (2) of the same political views, and chosen from the party possessing a majority in the House of Commons, (3) presenting a concerted policy, (4) under a common responsibility to be signified by collective resignation in the event of parliamentary censure and (5) acknowledging a common subordination to one chief minister." (Wilson) Of these five important features the first two will automatically follow the introduction of parliamentary government.\* But, as has been already explained, the next three have to be developed by the first ministers, and the earlier this is done the more efficient will government be in transferred departments. It is true that the British cabinet took centuries to arrive at these five features, but it does not follow that in India also centuries must pass ere we attain similar characteristics. India can to a substantial extent take advantage of the experience of Britain, as the Dominions have done.

The Reforms Act opens a number of high offices and responsible posts to Indians. They may aspire to governorships, executive councilorships (imperial and provincial), ministerships, and seats in the Council of State, the Indian Legislative Assembly, and the provincial legislative councils. But of all these important posts those which carry the weightiest consequences are undoubtedly the ministers' places. It is there and nowhere else that the Indian will be tested as to his capacity for sole charge (that is, without the help of the British rulers) of governmental work. If the first few sets of ministers fail, the privileges of self-government may be withdrawn, and in addition the country will suffer on account of maladministration. If on the other hand, as is almost certain, they succeed, they serve two important purposes. Of these the first in importance is the removal of the fear that Indians are not capable of democratic government. In spite of the fact that even in early ages there were democratic forms of government in India, even sympathetic statesmen like Lord Meston think that the reforms lie "crossways" to Indian political progress hitherto. It is for the ministers to show that the reforms lie on the direct highway of Indian evolution. Among other statesmen, Mr. A. F. Whyte (President-elect of the Indian Legislative Assembly) is of opinion that the furtherance of responsible government in India depends upon the success of the ministers in the transferred departments. Again, the first few sets of ministers will serve a great purpose if they act as useful models for their successors.



Thus it is no exaggeration to say that the best men are just now required in the provincial legislative councils to lead opinion, to take up the administration of transferred departments, and substantially to contribute towards "the progressive realization of full responsible government." But most of the able men offering themselves as candidates for election have sought seats in the Imperial Legislature, and this is rather disappointing. It may be that membership of the Imperial Legislature means a higher status and a wider horizon. But the test of the Reforms Act in India lies in the work of the ministers. Their success will ensure the introduction of responsible or parliamentary government in the central government by the statutory commission which will meet in 1930 or, if circumstances favour India, even earlier.

S. KESAVA IYENGAR.

## THE SPIRIT OF SOCIAL SERVICE.

(A lecture delivered in Mysore, in June, at a meeting of the Civic and Social Progress Association, by Dr. W. E. Clark, Professor of Sanskrit and Indo-European Philology, University of Chicago.)

IN the first place, I want to emphasize the fact that I am not a politician, not an adherent of any dogmatic religious sect, philosophical system or social theory. In particular, I am a student of Sanskrit literature and Indian history in general. As a scholar, it is my aim to understand as well as I can the world I live in and the nature of my fellow-men. I shall speak frankly to you and hope that my criticism will be taken in the spirit in which it is meant. This is not a social gathering for pleasure, entertainment and superficial compliments.

In the West, during the mediæval period, there were present many elements which were similar in general character if not in particular form to elements which are present to-day in India.

In the social life of the mediæval West, there existed a very large amount of class tyranny which there took the form of autocratic, tyrannical, despotic use of power by the kings and nobles. These kept themselves proudly aloof from the masses; they made use of their labour but kept them practically in a state of servitude and complete dependence. In the religious life also, there was a large amount of tyranny on the part of the priesthood. The priests insisted on some one dogma and creed or some one particular way to salvation. They sought to impose on the people some one particular course of conduct and ceremonial as alone having any validity. All who would not conform were threatend with hell fire and eternal damnation.

The masses in the West developed a strong sense of their own dignity and importance in the world, a feeling that they were able to think out social and religious problems for themselves. They gradually forced concessions from their kings and nobles limiting their too arbitrary power and winning for themselves a large share in the administration of the State. Any position was made open to them for which they could qualify themselves by individual personal worth. This has been a long, slow, process, but the ideal is gradually developing. It is becoming a cardinal social principle in the West.

On the religious side, since the time of Luther, the West has gradually been losing narrow creed and dogma and ceremonialism, and has

more and more been interpreting religion as a motive of service in the present life. The divine and superhuman is strongly felt, but it is conceived that this divine has little meaning and value unless it can be used to better present humanity. The tyranny of unknown superhuman forces, of superstitious fears, which cramp and paralyze human effort, has slowly been broken.

This religious element united to the social element I have mentioned makes social service. The masses are not left to struggle blindly by themselves for better living conditions, but the more fortunately situated, the more intelligent, are beginning to feel that it is their duty to help the masses as far as possible, to give them every opportunity to develop the latent abilities and powers in themselves. We feel that our future does not lie with the few highly educated or with the few millionaires. We feel that it lies with the masses, and is dependent on the spread of education, culture and prosperity among them. We feel that no country can be greater than the average of its people. The position of a country is not to be judged by the number of its millionaires and scholars, but by the general average of prosperity and culture, by its freedom from poverty and starvation. The mere increase of luxury and pleasure is no sign of progress, but the increase of the necessities and comforts of life, the increase of thought and culture, are signs of progress.

To my mind, the future of India is more dependent on social service than it is on political agitation with its endless idealistic speech-making. It is like taking hold of your feet and trying to lift yourselves from the ground. A man may read all the books on ethics and morality in the world and yet in practical emergencies be lamentably weak in character. Ideals are not enough to mould character; work and effort and practice are necessary.

What is needed is work, not speeches. The success of your Swaraj when it does come can be no greater than the success of your social life in your cities and immediate surroundings. Your political advance is dependent on your social advance. No form of religion can be greater than the nature of the people who practise it. If the culture of the people is low, they will degrade the noblest religious form to their own level. The same is true of government. Talking politics is easy, social reform is hard, unpleasant work. It is very easy to be charitable at a distance, but real charity begins in one's own immediate surroundings. It is easy to lend one's name and a little money to organizations, gaining thereby a reputation for liberality and liberalism. It is much harder to put the principles into actual practice yourselves at the risk of

disturbing your own comfortable well-being. It is very easy to neglect one's own surroundings and to speculate on some far lofty national ideal or to describe with regret some past golden age. This has been the persistent weakness of Indian thought—to regard the present as a vale of tears, sad and degenerate but unavoidable, to look to some golden future which is to come spontaneously without human effort, to depict a glorious past which was lost not through any human weakness or defect.

By forming an Association for Social service, you pledge yourselves to an ideal of active attention to your immediate surroundings. This principle has become the cardinal one of Western ethics. We believe that the ideal will inevitably follow such social betterment, that if we leave our surroundings bad, the ideal will inevitably be degraded by them. Those who are left to insanitary habits, dilapidated houses, religious superstitions and pressing poverty cannot develop ideals. I do not mean that a decent poverty is altogether antagonistic to ideals, but insanitariness, filth, too great poverty, and superstition are.

Your caste system prides itself on the fact that its ideal is one of co-operation, yet you have millions of the depressed, millions of the untouchables. These perform some of the most necessary functions of society. What does co-operation mean in their case? Only that they serve or operate for the benefit of the upper classes. Surely co-operation demands a counter operation from the high to the low. What do the upper castes do for them? If they do nothing, the word co-operation is meaningless, and yet some agitators expect these depressed millions to co-operate with them in a policy of Non-co-operation against the present Government. It takes but little "tarka" to see the absurdity of such a position.

In the distant past, ideal and practice may have been different, but for centuries the practice has been for the higher castes to think that the lower castes must work for and not with themselves, while they held themselves proudly aloof, conceiving that they had no duties to perform for the lower castes. This attitude has often been defended theoretically on the ground that the present high position of the upper castes is due to good deeds done in past lives, on the ground that the wretchedness, terrible poverty and suffering of the lower castes is due to the bad deeds done in former lives. Therefore the higher born should not try to relieve pain and suffering and ignorance, they should despise the low born and believe that their own high position is due to their own past merits. The amazing thing about India is that the low born have had so little energy of body and mind. They have, as a

class, passively acquiesced in the theory of their own innate and absolute inferiority, and have yielded slavishly to the theories of the priesthood.

The trouble is that any such condition reacts on the upper classes themselves and works towards their own passive self-satisfaction and degeneration. A tyranny of religious prejudices is just as bad as, or worse than, the physical tyranny of unjust kings and nobles.

The whole idea and system is a most shallow and mischievous interpretation of the ennobling ideal of "Karma." I do think that proper interpretation can make it an ennobling instead of a depressing ideal.

Early Indian Mathematics, Astronomy, Medicine, Grammar, Philosophy, Religion, and Political theories were remarkable for their time. Why does not India still lead the world in these matters? There was a definite and continued growth up to the period between 1000 and 1200 A.D., although elements of decay are visible several centuries earlier. Every branch of thought and practice stagnated and became scholastic. Instead of deeper criticism and further development everything was regarded as having attained a final form. The old things were tasted and re-tasted, divided and sub-divided. We got commentaries, commentaries on commentaries, and commentaries on commentaries on commentaries, and an immense elaboration of ingenious scholastic dialectic, which circled around the same spot without venturing to criticise and take a step forward. In Mediæval Europe, the scholastics would spend hours debating the question of how many angels could stand on the point of a needle. The Mediæval Indian books do the same sort of thing. The men did not strive for a larger observation and experience of life as a broader basis for theory. They conceived that there was nothing more to be known. The theory itself was perfect in every detail.

The present condition of India is not due wholly or chiefly to the domination of a foreign power. It is largely due to internal stagnation. It is a sickness which has lowered the heart-beats of the country and has made its blood circulate slowly. The blood will pulse again through your veins only after you have removed the internal causes of the disease. Those of you who have the knowledge that there is really a disease in the body politic and who think that you know some of the causes must appoint yourselves physicians. You must make it part of your karma to work and help to raise the vitality of your country.

You may denounce the evils of Western social life—there are many and we are struggling manfully against them—you may praise Indian ideals of the past, and by the scholastic methods of the past try to see all of them

still in the present; but history proves clearly that no society can be healthy if it does not allow scope to every individual to attain the position to which his personal qualifications entitle him. By no means every Sudra is naturally unintelligent. By no means every Brahmin is naturally intelligent. Character not birth must be the basis of caste. In this interpretation of caste, in the matter of educating young women, in the matter of child marriage, and in the matter of the treatment of the widows, you need not merely imitate the West. You should go back to the best of your own ancient scriptures. How many of you really know the teachings of your old books, not the Mediæval texts on these subjects?

You, of the upper classes, must show to the lower classes better ways of living and thinking. This is Social Service, a service of the higher to the lower, with a real spirit of co-operation on both sides. It does not need to be a mere imitation of the West. I am convinced that your future must be chiefly based on the best of your own Indian ideals.

You must give an Elementary Education to the masses, an education that will give them a common sense, practical knowledge of the world and of natural forces, a sense of their importance and power in the world; an education that will arouse them from the feeling that they are altogether at the mercy of capricious forces of nature against which it is vain to struggle. Make them optimistic and efficient. So much is essential to progress. There is much talk against education on the ground that education is not in itself essential to character. True enough, but the presence of ignorant superstition is opposed to character and progress. Teach people to really understand the world they live in and religion will take care of itself. Religion begins only where human knowledge ends. It deals with the superhuman. Human knowledge must be your chief criterion so far as human knowledge goes. To see the supernatural in things which present-day knowledge knows to be due to ordinary natural forces is superstition.

Those of you who have higher and nobler conceptions of Divinity should not leave the masses to ignorant superstition and meaningless ceremonials, should not jealously guard such higher knowledge and purer religion and keep them a secret to yourselves.

A religious system which does not try to raise the general level of social life in the light of the best current thought is of little value. It is rather a hindrance, for it clogs social life and makes it stagnant. We had the same sort of stagnation in our religion and priesthood in the West, but slowly we are tearing ourselves free.

There is enough to worship in the wonderful power shown in the uniformity of natural laws. The masses in India see as the best proof

of Divinity, the ability to break all laws and to set aside the order of nature. Miracles and wonders and portents dominate the lower forms of Hinduism—blind credulous belief without any proof or reason. No renaissance can come without a corresponding reformation in religion.

It is an idle dream to think that the past can be recalled in exactly the same form. To moan for a real or a supposedly beautiful past is a sign of weakness not of strength. The present must be met as it is. The Indian intellect must master Western knowledge. There is no escape. All or part of it may then be rejected. Some have claimed that the ancient Indian sages knew all, and more than all the West now knows of natural forces, but that they deliberately rejected it all as "bad." Has the rejection, if there was such a thing, resulted in prosperity and the welfare of the people as a whole? The present Indian sages must now prove their mastery and show their latent ability, or the claims are idle fancies.

I do not know whether a democratic form of government is suited to India's near future or not. Even in a monarchical form of government, the present position of the masses would drag down the position of the country in spite of a small, wealthy, intelligent oligarchy.

If you sincerely believe in any social and religious reforms, each of you must do some practical work towards them. If you honestly believe in raising the intelligence and lives of the masses, in freeing them from religious superstitions, if you believe in the education of women and in the giving of greater comradeship to your wives, if you believe in a more rational attitude towards widows and child marriage, each of you in his own life must practice the principle even at the cost of sacrifice to his own comfort, and must in some small way help to influence others. Ideals and principles are easy things to have until they clash with one's own easy routine and comfort. The way of the pioneers is not easy. I urge you not to copy slavishly everything Western, but to criticise your own past in the life of present reason and build on it. Some elements will have to be added from the West. Even in recovering the best of your own past there is ample room for social service.

W. E. CLARK.

## THE SPENSERIAN STANZA IN SPENSER'S HANDS.

### I

THE Spenserian stanza, it need hardly be said, consists of eight decasyllabic verses, followed by a closing alexandrine, these nine lines being inter-connected by means of a subtle rhyme-scheme, *ab ab bc bc c*. So runs the insipid technical description of a prosodic entity from which our poet extracted ravishing strains of melody. Before one undertakes the appreciation of the manifold beauties derived from Spenser's manipulation of his metre, one feels oneself morally obliged to eradicate a misconception about the origin of the stanza which unfortunately still lingers in some quarters. James Russell Lowell, in an essay otherwise remarkable for its brilliancy and acuteness, declares that Spenser "found the *ottava rima* (an eight-line stanza used by the Italian poets Aristo and Tasso). . . . not roomy enough," and that, therefore, he "first ran it over into another line and then ran that added line over into an alexandrine." This over-confident definition of Spenser's metrical unit "as *ottava rima* plus an alexandrine is," in the words of Dr. Saintsbury, "worse than inconsiderate and unintelligent." Even a casual inspection of the rhyme-schemes of the two stanzas reveals the utter inaccuracy of the statement; for the *ottava rima* rhymes *ab ab ab cc*; and the difference is "vital to the symphonic music." Some other persons have formulated the not improbable theory, that the verse-form employed in Chaucer's *Monk's Tale* was the immediate source of the Spenserian stanza. Spenser undoubtedly prided himself upon being a close and enraptured student of "Don Chaucer, well of English undefiled;" and the usual arrangement of the rhymes in Chaucer's octave is identical with that of the first eight lines of Spenser's stanza. But sometimes Chaucer adopts the rhyme-form, *ab ab bc cb*, a practice unheard-of in all the seven books of the *Faerie Queene*. To even the most stringent partisans of the Chaucerian origin we need only grant that the study of Chaucer might possibly have given a vague suggestion of the octave to Spenser. Indeed, an unbiassed consideration of the problem compels one to yield the full credit of original invention to Spenser. It seems scarcely justifiable to indulge in remarks upon Spenser's borrowing of verse-forms, in the sense in which we assert Sir Walter Scott's borrowing of the Christabel-metre. The sovereign remedy



for all such delusive notions would be to "grapple" to our souls, "with hoops of steel," the great truth that the Spenserian stanza is, and was meant by its creator to be, a prosodic whole, one and indivisible, depending for its effect upon its entire being. Spenser desired, for reasons to be specified shortly, to fashion a stanzaic structure whose dimensions should exceed the limits of the rhyme royal and the octave, but should not reach the range of a sonnet. The former were too fleet-footed and modest, and the latter was too leisurely and elaborate, to serve his purpose. He invented—for his achievement can adequately be expressed by no less a word—the verse-form, which still bears his name. The addition of the alexandrine was a stroke of genius; and it effected a radical revolution in the character of the verse. Remembering the fundamental unity of the Spenserian stanza, one can easily perceive that the endeavour to build ingenious doctrines of source and origin upon a fanciful division between the octave and the alexandrine stands condemned as futile. Spenser might, here and there, isolate the final verse in order to fulfil a particular desire; but that does not justify an assumption that the alexandrine is prosodically separable from the octave.

## II

Guided by a delicately sensitive ear and an exquisitely refined taste, the poet angles for words and metres which seem fittest for the occasion, and which possess the greatest rhythmic potentialities. There dimly appears behind all his constructive manœuvres the operation of a force, whose mystery every attempted explanation only serves to augment. In spite of the acknowledged impossibility of finding a final solution to the mystery of poetic composition, critics and readers alike have tried to account for the occurrence of strange phenomena in the poetic world. The honour of having discovered the mighty possibilities of the combination of eight five-stress verses with a six-stress verse belongs, as we have seen, to Spenser. That Edmund Spenser alone, and none before his birth, should have dreamed of the springs of beauty and harmony hidden in this stanzaic form, strikes one as a marvel. Yet our astonishment becomes less when we reflect upon certain circumstances which exerted their influence in determining Spenser's choice of verse-form.

It was an age of great discoveries. While the celebrated "sea-dogs" cut their ways across the waters of unknown seas, ever in search of fresh lands and capes and adventures, their poet-brethren at home, gifted with an equally unbounded zeal and energy, instituted far-reaching innovations in the field of imaginative literature. Both the English

language and the English prosody were yet in an unformed state, awaiting the appearance of master-minds to turn them "to shape and use." Spenser, who came early upon the scene, and who had the born experimenter's talents, exercised himself in the *Shepherd's Calendar*. But he soon grew tired of Cuddies and Thenots and "silly sheep." Animated with the confidence of a young poet who, on his first appearance, had been acclaimed as the greatest of contemporary poets, and feeling the puissance of a poet who had already tried his hand at playing various tunes, he sought and found the right instrument for his "fierce warres and faithfull loves."

Again, the intimate connection between the substance and the form of poetry has been well established in the theory of critics and the practice of bards. The *Faerie Queene* treats of fights and loves, belonging to an ideal world of fays and wizards, probably situated near Venus, but certainly beyond the earth. The attempt of Spenser to produce "willing suspension of disbelief" may be unsuccessful. But we will not have allowed his bewitching magic to permeate our souls if we refuse to float with him into a thin atmosphere of silvery moonlight, alluring arbours, sweet-scented flowers, and murmuring sounds where shadowy knights of uprightness slay in dubious battles imaginary pagans of filthy instincts, and rescue insubstantial damsels in the nick of time. This vague, soothing, slumberous atmosphere envelopes the *Faerie Queene*; and none who has freely breathed in it will deny that both the matter and the metre participate equally in the creation of this effect. Here has been as perfect a harmony between the subject and its prosodic vehicle as it is possible to attain. And this we can declare in spite of occasional discordance when Spenser writes in an uninspired mood.

Besides, Spenser possessed an emphatically romantic temperament. The essence of the romantic art, when viewed in opposition to the classic, lies in the attention paid to the elaboration of the parts of an organic whole. While the classic artist arranges the details in a skilfully and accurately adjusted pattern, always subordinating their decoration to the demands and purposes of the entire organism, the romantic artist gives himself up to the ornamentation of the parts, sometimes even forgetting the primal purpose of the work as a whole. This happened in Spenser's case. He started with the ostensible motive of setting out the twelve moral virtues in the form of a personified allegory; but whenever he came upon a peculiarly apt situation for a descriptive or poetic flight, this thread, fragile and elastic in general, snapped unperceivedly; to be resumed only when the poet was satiated with the enjoyment of verbal

colour and tone. We need not quote instances, as they are sure to occur to every reader. Now the worthiest channel for the outlet of the poetic current from the mind of a poet like Spenser, was the stanza he invented. For its length would allow it to stand in isolation, so that the poet could easily compose descriptive groups; while, when the impulse to continue the narrative returned, he could as easily connect two stanzas and proceed. The length of the stanza, as has been said before, precluded absolute separation as well as breathless speed.

Lastly, Spenser loved dilation from the bottom of his heart. His picturesque fancy seems to have looked upon conciseness as piggardliness of expression. This tendency towards pompous elaboration was a common feature of the Elizabethans, about whom everything was large. Marlowe thundered upon the stage. Shakespeare moved tears and laughter, excited and comforted the audience, as few dramatists in ancient or modern times have done. Bacon took "all knowledge for his province." Spenser drank deeply of this spirit. The stanza of nine lines covered a sufficiently large area for him to indulge in long-winded descriptions. Indeed, so persistently did he carry on this process that, occasionally, he succumbed to the tendency to weave an ordinary thought into an unexpectedly extensive web.

Thus, led along by his ambition to devise ever new instruments of verbal harmony, and under the dictates of his special subject-matter, Spenser constructed a species of stanza which afforded ample scope for his romantic temper and love of elaboration.

### III

The creation of the new stave was responsible for only a portion of the glory which Spenser won as a prosodist; the rest was warranted to him by the astonishingly clever and brilliantly varied use he made of the wonderful instrument. As the poem he had planned was of gigantic proportions, by the time he reached the end of the incomplete seventh book, he had exhausted almost all the resources of his poetic faculty. Thus in the completed portion of the *Faerie Queene* we have perhaps the best that Spenser could give as a metrist. It is a curious fact that, notwithstanding its employment by succeeding poets of the most divergent tastes, equipment, and genius, the Spenserian stanza remains his own. Not one of the numerous imitators of the Poets' Poet has been able to reproduce the spirit of the master. While every one of them has, in some measure, produced the strange, soporific appeal so peculiar to the stanza, almost all of them have failed to create the atmosphere of a quaint world of dreams and enchantments in the naive and splendid

manner of Spenser. Spenser continually makes us think of an otiose life of poetic justice, charm, and religious enthusiasm in an alien and far-off, though congenial, element; while in reading his imitators we rarely abandon ourselves involuntarily to such a fancied life. We feel as though our feet were fettered by some remorseless hand, hindering us from essaying ærial transpositions. In the case of Spenser, on the contrary, with the utterance of the first verse our imaginations brighten, and, in a minute, we pack up for a holiday in the illuminated gardens of Oberon and Titania. One of Webster's heroines stands up before her fiendish tormentors, and asserts with sublime dignity: "I am Duchess of Malfy still!" The stanza of Spenser can declare in the presence of his imitators: "I am Spenser's stanza still!" It remains for us to investigate the crafts and devices whereby Spenser has attained this singular distinction.

## IV

The decasyllables proceed for the most part at an easy and smooth marching pace. The two quatrains (*ab ab bc bc*) are linked together by the rhyme-syllable, *b*. The poet's thought can appropriately spread over the second half of the octave, or, if exhausted, can end with the fourth verse. At the same time, the rhyme *c*, in addition to the inherent stanzaic unity, brings the alexandrine into close contact with the preceding lines; and therefore, Spenser could, at his discretion, devote either the entire stanza or a division of it to the expression of a thought. Occasionally, a single, though complex, idea governs the length and breadth of one whole stanza; and when joined to a degree of elevation in utterance, it gives rise to the effect of a solemn poetical address, suggesting the sublimity of Milton's verse-paragraphs, examples of this are found in II. 6. 2; III. 5. 33; IV. 9. 1. When the moralising mood takes possession of Spenser, or when he finds himself lashed to righteous indignation at the gross deed of an imaginary person, he indulges in this oratorical device. Sometimes a stop occurring at the fifth verse divides the stanza artistically into two halves, corresponding to the division of the thought.

In the poem end-stopped verses predominate, although pauses do appear in the middle of a line frequently and when they do, they answer particular requirements. To speak in general terms, full stops may come at the end of any verse between the fourth and the seventh; only rarely do we find the alexandrine standing by itself. A close examination reveals no mark of arbitrariness in the arrangement of the pause; on the contrary, it shows the careful art of an expert metrist.

Very often the *cæsura* breaks the verse after the fourth syllable, producing a telling effect, as in—

And proudly said ; Loe there the worthy meede.

Sometimes it produces an onomatopoeic effect, as in—

So backe rebut, and eache to other yeldeth lande.

and in—

And him so strongly stroke, that to the ground him feld.

Sometimes three pauses make a line subtly reflect feelings like bitterness, weariness, or amazement, as in—

He knock'd faste, and often curst, and swore.

Dame Una, wearie dame, and entrance did requeere.

And said, why Archimago, lucklesse syre ?

Again, a line may be broken up by a number of pauses, especially when Spenser, desiring to produce a revolting effect, accumulates nauseous epithets.—

Most loathsom, filthie, foule, and full of vile disdayne.

But we cannot enumerate all the ways in which the poet makes the *cæsura* a wonderful source of poetic effect.

Poets have a pleasing practice of giving an early indication of the coming exuberance of power and beauty in a poem. Spenser employs this device in the *Faerie Queene*. A fund of pleasure can be drawn by directing our attention to the commencement of each canto. Frequently we find there an appropriate simile of the Homeric type, a reflection on the glory of departed days or on "lovers sad calamities of old," a fervid sermon on a moral text, or a description of the hour of the day in glowing astrological terms. But sometimes it is the winning melody of the vowel or consonantal combination that arrests us. When a verse at the beginning of a canto moves like—

Soone as the morrowe faire with purple beames—

the listeners are immediately the captives of the poet, so subtle is the stringing together of the long vowels with the delicious words, "faire" and "purple." But this charm only heralds the advent of a prolonged flourish of verbal music.

Words possess phonetic symbolism, or the power by which, when arranged in a certain series, they produce a particular effect. They evoke feeling appropriate to their sound. True poets possess this secret : they can effect a perfect marriage between emotion and words. Spenser

never seems to be tired of the celebration of such weddings. We may quote a few examples. In this couplet—

All in a silken Camus lyly whyght  
Purified upon with many a folded plight—

the words seem to dance to a lively tune, the sprightly effect being obtained by the alternation of long and short vowels and the plentiful use of the divided sound "l" in the first verse, and by the repetition, after a series of light syllables, of "f" "l" and "p" in the second. The artistic adjustment of the words in—

Both seem'd to win, and both seem'd won to be

indicates the overmastering doubt in the mind of Fradulio when called upon to pass judgment on the relative beauty of two damsels. In the following four verses the employment of "d" "t" "nd" and "tr" added to the even fall of the feet, creates an atmosphere of horror, expectancy, and super-human power.—

Till at the last he heard a dreadfull sownd,  
Which through the wood loud bellowing did rebownd,  
That all the earth for terrour seem'd to shake,  
And trees did tremble.

The descriptions of Morpheus and his dormitory (I. l. 40-41), of Phœdria, the idle lake and the magic gondola (II. 6), and of Acrasia's bower (II. 12, chiefly 54, 71, 74) are instances of exquisite harmony between phrase and feeling. Sometimes a poetic effect of an extraordinarily powerful kind may rest on the strength of a single word, whose apposite employment betokens the high inspiration under which the poet wrote—

More swift than swallow *sheres* the liquid sky.

Who does not feel here the rapid flight of the bird ?

Beside a *bubbling* fountaine low she lay.

Here, the slow and solemn beat of the iambic feet and the use of the heaven-sent word, "bubbling," magnificently suggest the pathos and transience of human life.

## V

Now we come to the closing verse of the Spenserian stanza, a verse which Spenser evidently treated with an extreme partiality, and on the beautification of which he expended all his pictorial and rhythmic capabilities. He fully recognised the untold possibilities of his invention; and, by means of embellishments of various kinds, he made

it one of the glories of English poetry. The practice of "accounting" for poetic effect has been often unsatisfactory, and sometimes dangerous. And naturally; for the spiritual essence of poetry contemns formulæ. Yet, as the finite may suggest the infinite, so the critic's intellectual division can help towards a keener appreciation of the power and music of poetry. So one might be permitted an attempt at tracing the poetic opulence of Spenser's alexandrine back to some peculiarities of length and position, provided one does not entertain the ambition of explaining away the marvel and mystery underlying that opulence.

We have already referred to the fitness of the Spenserian stanza for both descriptive and narrative efforts. So also with the alexandrine. In general, Spenser links it harmoniously with the preceding eight verses. But, on rare occasions, he finds it more convenient and fruitful to invest it with a certain degree of isolation. Of course, the separation cannot be complete or glaring, as it is difficult to transcend the limitation imposed by the connecting rhyme *c*. When the concluding verse thus stands a little apart from the rest of the stave, it can perform certain functions. It allows the poet to announce a desire, as in—

Fierce warres and faithfull loves shall moralize my song—  
or to breathe forth a pious wish for himself, as in—

Ah! dearest God! me graunt I dead be not defouled!

Again, an object which does not admit of a long description, or a thought which is unconnected with that expressed in the preceding lines, can be introduced.—

And by his side his steede the grassy forage ate.

And by her in a line a milke white lambe she lad.

Moreover, it can worthily embody a reflection on the events just described, or give room for such a "sentence" as is dear to the puritanical Spenser—

God helpe the man so wrapt in Errors endlesse traine.

So darke are earthly things compar'd to things divine.

Sometimes the verse is astonishingly bald in the simplicity of its structure, which may lead one not unreasonably to suppose that the poet wrote it merely to fill out the stanza.

So to the rivers side they both together far'd.

Such one was Idlenesse, first of that companie.

In the majority of the stanzas, as we have said before, the alexandrine is closely bound together with the other lines. But the alexandrine can

#### THE SPENSERIAN STANZA IN SPENSER'S HANDS

produces effects of its own, of a striking variety. This must, of course, be ascribed partly to its position at the end of the stanza, and partly to its greater length. We shall consider first the position of the verse.

Standing at the end of a stanza, the alexandrine serves to bring the chief ideas of the stanza to a consummation—

Fair harbour that them seemes, so in they entered arre.

Occasionally an interesting parable or adage adds freshness and vigour to the close of the thought, as in—

The fish that once was caught, new bait will hardly bite.

Again, it may sum up a description, or set the seal of conclusion on an episode—

More fit amongst blacke fiendes then men to have his place.

So shedding many tears, they closed the earth again.

The alexandrine appears often to possess, by right of its place, the authority, as it were, of the supreme figure in an institution. It forms the climax to the sweetness, melody, pathos or repulsion which the stanza tends to impress upon the reader's mind. In the narrative of the fight between Timias and the foresters, the effect of an entire stanza is concentrated in the one line—

And a large streame of bloude out of the wound did flow.

The intolerable filthiness of Error's body finds apt expression in the line—

A streame of cole-blacke bloude forth gushed from her corse.

Even in the enumeration of objects the last line may contain a complete list of the things described in the preceding verses, as—

Birds, voyces, instruments, windes waters, all agree.

Now and then, it gives rise to an exquisitely pathetic effect, when it strikes again the keynote of the stanza by repeating the words occurring in the first line—

Pittiful spectacle of deadly smart,

Pittiful spectacle, as ever eye did view. (II. 1. 40)

Again, a series of arguments may receive a quiet finish, suggesting the tranquil conclusion of the speaker, as in the final sentence of Despair's harangue—

Death is the ende of woes : die soone, O faeries sonne.

Or, coming at the termination of a bold speech, the line can magnify the terror of a combatant's menace—



Loe where the dreadfull Death behinde thy backe doth stand.  
Or, containing an interrogative, it can enforce an argument—

For why should a dead dog be dect in armour bright ?

In other cases, especially where the narrative interest predominates, the last line skilfully prepares for the succeeding stanza.

We have now to consider the effect produced by the length of the line. A few instances may be quoted to show Spenser's manner of differentiating a six-stress from a five-stress verse. Being longer than the other verses, the alexandrine naturally bears a much heavier load of thought. There are occasional examples of compression, a feat which strikes us with wonder, as it comes from a poet notoriously addicted to elaboration. What an amount of thought appears in the single line—

And where he hits nought knows, and whom he hurts,  
nought cares.

Sometimes, an entire simile can be contained in the line—

As weather-beaten ship arriv'd on happie shore.

Thus, as a rule, Spenser confines his moralising to the termination of a stanza. Again, it may be rendered powerfully by an accumulation of details, for which its length renders it peculiarly fit. We notice the suggestion of dismal noise and horror in—

They rear'd a most outrageous, dreadfull, yelling cry—  
and of idle intoxication in—

Made drunck with drugs of deare voluptuous receipt.

The alexandrine keeps in the main a slow and leisurely movement, quite natural, considering its length. But a brisk gait, suggestive of quickness and hurry, does not seem to be beyond its capacity, as this line proves—

And fiercely unto battell stearne themselves prepar'd.

Sometimes the verse swings about the middle in a state of beautiful equipoise—

So double was his paines, so double be his praise.

And both did gnash their teeth, and both did threaten life.

Lastly, the large number of pauses that can enter this line make it specially adaptable for the expression of emotions. We notice anger and resentment in—

And now is fled ; foule shame him followe, where he went—

## THE SPENSERIAN STANZA IN SPENSER'S HANDS

and overwhelming eagerness and tender solicitude in—

Speake, O dear Lady, speake, helpe never comes too late.

### VI.

In deciding to make a nine-line stanza turn on only three rhymes, Spenser courted difficulties. The fact must be borne in mind that English is comparatively barren of rhyme-words. Calderon could compose whole romantic dramas in a variety of intricately rhymed stanzas, because the Spanish language smiled on his attempt. But Spenser had to face what would have seemed to a less sure or less adroit genius an almost insurmountable barrier. Did he triumph over this difficulty? One must sadly answer in the negative. Floating in careless ease on the melodious river of Spenser's numbers, the reader gets here and there dashed against unforeseen rocks. There is a straining of the laws of syntax, prosody, and even good sense. A ruse which subsequently fell into much discredit—that of plentifully employing expletives—saves our poet from many troublesome situations. He also employs another device, in hardly greater favour in modern times, that of repeating a word with a different signification, as “traine” in I. 1. 18. Again, one line takes the cumbrous form—

For present cause was none of dread her to dismay—  
because of the exigency of rhyme. In the verses—

He cared not for God or man a *point*.

That may restore you to your wanted *well*—

“point” and “well” find place, in spite of their inappropriateness, merely to rhyme with “joint” and “spell.” But such instances are like spots on the sun's surface. Considering the enormous dimensions of the *Faerie Queene*, and the state of the language in which Spenser versified, the few faults of rhyme dwindle into insignificance.

### VII.

Like all excellent metrists, Spenser enriches his poetry by varied devices, though he is not always happy in the use of them. One of these is repetition. He repeats a word either to make the account of an incident more graphic, as in—

And doubling all his powers, redoubled every stroke—  
or to intensify the emotion, as in—

Come then, come soone, come sweetest death to mee.

A word or phrase occurring again in the next line helps the poet to lay stress on a certain fact—

That he Malbeccos halfen eye did wyle.  
His halfen eye he wiled wondrous well.

Occasionally the word or words with which a stanza begins are repeated in the last line, thus "completing the circuit"—if the phrase is allowed—of a feeling or a request.—

Helpe then, O holy virgin.....  
.....

O helpe thou my weake wit, and sharpen my dull tong.

A broader effect is obtained by repeating an idea in almost identical words through a number of consecutive stanzas. "Dye, rather, dye" in III. 5, "so down he fell" in I. 12, and "he could not tell" in I. 8 are examples. Again, when Spenser wishes to linger fondly over a pleasing detail, repetition is useful—

Withall she laughed, and she blusht withall,  
That blushing to her laughter gave more grace,  
And laughter to her blushing as did fall.

Spenser certainly was not infallible in his usages: one can point to stylistic tricks of the euphuistic kind as in—

So them deceives, deceived in his deceit—  
to ugly jingles as in—

Fyrie steele now burnt, that erst him arm'd,  
That erst him goodly armd, now most of all him harmd—

and to cases where repetition appears to satisfy no worthy need, unless the need to find sufficient matter for a poor stanza were considered worthy.

## VIII.

In general, assonance, where it appears, governs the important words of the line, sometimes increasing their emphasis, as in—

Scarsely had *Phoebus* in the glooming *East*.

Sometimes a beautiful harmony results because of the delicate balance characterizing the assonance—

But *rudely rag'd* and like a *cruel tygre far'd*.

We may note the suggestion of weariness in—

Whiles yet his *feeble feet* for faintness *reeled*—

and that of firm resolve in

*Seeking the weak oppressed to relieve.*

## IX

Spenser's study of the English poetry of the Middle Ages, especially the metrical romances and Chaucer, combined with his love of musical cadence, gave birth to a special fondness for alliteration. Indeed, so habitual with him did the alliterative manner of expression become that it manifested itself both in season and out of season. In countless instances he derived an extraordinary amount of "artful aid" from "apt alliteration," though its use was sometimes unfortunate. Phrases like "girlonds gay", "hollow howling," "bright blazing beaute," "mincing minion," "comely courteous," "kestrell kind," and "rolling sea resounding soft," betray the dominant tendency of the poet. Sometimes the alliteration places tremendous stress on a sentence, or enhances the vividness of a description—

With sturdie steps came stalking in his sight.

Darke, dolefull, drearie, like a greedie grave.

Again, an emotion may receive adequate expression by means of this verbal trick—

His gall did grate for grief

First flower of my freshest age.

Spenser was well aware of the peculiar symbolism which certain sounds possess, and he used his knowledge to perfection.—Thus, in the following instances we can feel how the repetition of the sound "k" heightens the sense of cruelty—

Seemed in their song to scorn their cruel sky.

That cunning Architect of cancred guile.

The alliteration turning on the letter "w" stimulates the feeling of immensity or desolation—

And then with wordes and weedes of wondrous might.

But with his oares did sweepe the watry wilderness.

In all his wayes through this wide worldes wave.

Instances where a clever use of alliteration in "r," "s," "l," "m" and "n" suggests unbroken slumber, or the rustling of the leaves, or the gentle fall of the rain are too well-known to need citation. In the following

the multiplication of "l" emphasises the weary and heavy day—

And take away this long lent loathed light.  
But on another occasion the same "l" evokes a feeling of light sportfulness—

Full of disport, still laughing, loosely light.  
Again, while a sprightly description appears in—

So faire and fresh as freshest flowre in May—  
in another place the alliteration depending on the same "f" calls up the image of unflinching determination and terrible fight—

No foote to foe, the flashing fire flies.  
Unfortunately, Spenser does not always reveal sureness in the handling of this instrument. At times his manipulation stands too apparent for high art. A verse like this—

The blazing brightnesse of her beauties beame—  
is spurious poetry.

## X

A few words will suffice to indicate two or three defects noticeable in the Spenserian stanza and to bring our essay to a conclusion. In spite of the abundant variety of devices and melodies observable in the versification, one cannot help feeling a certain sameness in the stanzas of particular sections. We must carefully guard against misapprehension. What we mean is structural similarity between consecutive stanzas. This leads us to another so-called defect. Some have charged the Spenserian stanza with languor, saying that often it does not march forward, but has a circling motion, returning upon itself. Undoubtedly rapidity of movement formed no part of Spenser's vast scheme. He desired a slow, though not halting or languid, movement of the verse, because it would most aptly represent the ease of the world he meant to portray. Again, some readers of Spenser have been wearied by the *Faerie Queene*. It is their own fault. As Dr. Saintsbury says, each stanza furthers the progress for the next as well as for itself. And it is largely in this that the *untiring* character of the *Faerie Queene* consists. Lastly, the poet meets some harsh criticism because he has cloyed some of his readers with his sweetness and profusion. He is indeed over-exuberant, but his exuberance is not of the violent and almost thoughtless type which we find in Swinburne. Besides, Spenser lived in an age when self-control was a rare commodity, and when men's souls were fired with limitless hopes and expectations.

#### THE SPENSERIAN STANZA IN SPENSER'S HANDS

No later singer has poured forth such a flood of sweet music. The desire to enhance the loveliness and melody of the verse was ever with him, and constantly he sought new means. Now he plays upon a cunning agreement of sounds ; again he indulges in an artful repetition. Here we listen to a ravishing combination of vowels and consonants ; there we enjoy the coruscations of descriptive epithets. Who can deny to him that noble title of "the poet's poet"—the inspirer of the inspired ?

S. V. RANGANNA.

## REVIEWS.

*Hymns of the Tamil Saivite Saints.* (The Heritage of India Series.)

By F. Kingsbury, B.A. and G. E. Phillips, M.A. Association Press, Calcutta. Paper Rs. 1 : Cloth Rs. 1-8-0.

THE "Heritage of India" Series, as is now well known, is intended to provide for the general reader cheap books treating of the wisdom of ancient India. The aim of the present work is to give an idea of the piety and spirit of self-surrender that inspire the sacred songs that are daily sung by one important set of South Indian devotees, viz., the followers of *Siva*. Here are included about a hundred specimens of Tamil hymns, all noted for striking sentiments. They are selected from four different authors—Sambandhar, Apparswami, Sundaramurti and Manikka Vasihar. These hymns, which are printed in the original, are accompanied by clear and readable translations in English. There is also a well written Introduction dealing with topics such as the conception of *Siva*, the deity glorified, and the lives and legends of the hymn-makers. This Introduction and the annotations to the renderings of most of the hymns will be found very useful—especially by the alien reader—not only in understanding but also in entering into the spirit of the songs. There are five illustrations—four intended to be portraits of the poet-saints, and the fifth a representation of *Siva* in the well-known form of *Nataraja*. We heartily recommend the book to those that are interested in the religious life and devotional poetry of South India.

M. H.

*The Village Gods of South India.* (The Religious Life of India Series.)

By the Right Reverend Henry Whitehead, D.D., Bishop of Madras. Second Edition. Association Press, Calcutta. Paper Rs. 2 : Cloth Rs. 5.

THE material for this book, we are told in the Preface, has been gathered almost entirely from the author's own observation and inquiry, and the large variety of the information that is brought together here certainly testifies to his patience and perseverance. But the details recounted, while they may be of interest to the student of primitive

customs and beliefs, will be felt by the general reader as somewhat trivial and wearisome. This remark applies practically to the whole of the contents of the first seven chapters of the book. The next two chapters deal with general questions such as the origin of the beliefs and ritual described and their influence upon the life and character of village folk. Here we are in the midst of pure conjecture and fail to find much that is really convincing. The Hindu reader will further note certain misapprehensions and mis-statements which are perhaps due to the desire 'to bring the religion described into relation with Christianity.' The author for instance avers that these religious practices—which he generally denounces—serve as a preparation for receiving the Gospel of Christ (p. 156). We are surprised to find inaccuracies in a book of which the present is a second and revised edition. Note, for instance, the misprint on p. 16, and a worse error of fact on p. 80. The book is illustrated.

M. H.

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*The New Shakespeare.* Edited by Sir Arthur Quiller-Couch and John Dover Wilson. *The Two Gentlemen of Verona.* Cambridge University Press. 6s. net.

IN last issue we reviewed the first volume in this most interesting edition—*The Tempest*—and the plan and purpose of the edition were then pointed out. Its application to the text of Shakespeare of such recently-devised tests as those based on the new knowledge of Shakespeare's handwriting is of the greatest interest, and may well introduce modifications that will be generally accepted. There will be plenty of quarrelling as to particular conclusions, but at any rate the new method has come to stay. In reviewing the *Tempest* volume we disputed one or two of the judgments of the editors, and this time without going into such detail, we would repeat that an edition that sets out to provide and defend a really new text should deal more faithfully with previous discussions. These are but small volumes, and the notes are of necessity brief, but we think that for scholarship's sake they should be more comprehensive than they are. We would repeat, too, our plaint that the lines are not numbered except at the top of the page.

The peculiarly troublous problem of the text of *The Two Gentlemen* is most carefully dealt with—in Mr. Dover Wilson's discussion of "The copy for *The Two Gentlemen of Verona*, 1623" and continuously in the notes. Here is some fine, scholarly work; and the reader will find



it an education in Shakespearean scrutiny to make a study of the play with these notes, keeping this particular point in view. Further, as in all work with which Sir Arthur Quiller-Couch is associated, there is the freshness and vividness of perception that knows no reverence for traditional views. The living essence of the play, the actual conditions of its fashioning, its writing down, its acting, its printing and re-printing—these are always clearly present to his imagination, and if that imagination sometimes leads him astray this is the defect of a well-nigh unique virtue. He amuses, irritates, stimulates, and sometimes even convinces. Of course we cannot separate the collaborators, but evidently there is something of “Q” in a little note like this, on III. 1. 271. “*Catalogue* F. ‘Cate-log,’ which all mod. edd. follow as if it were a quibble. This is one example, out of many, of a Shakespearean spelling being retained and mistaken for a joke. ‘Catelog’ was formerly a recognised spelling (V. N.E.D.). Author’s spellings are always liable to crop up in comic speeches because the compositor then follows his copy more closely than usual.” This is the sort of thing. Evidently the first part is right: there really is no play upon the word. But is there any truth in the last sentence? Surely none. There is no conceivable justification for this idea. The point is, however, that these editors have a very vivid, if sometimes misleading, mental picture of the compositor as well as of the dramatist and the actor; and sometimes that mere vividness serves to clarify a problem.

Sir Arthur Quiller-Couch’s general *Introduction* is not reprinted from the *Tempest* volume. The special *Introduction* to this play is written by him, and it is exceedingly good in his characteristic way. Finally, certain new, and, on the whole, helpful devices are employed in the printing of the edition throughout. We quote from the pre-fatory note, which, however, refers the reader for a fuller explanation to the *Note on Punctuation* and the *Textual Introduction*, which, like the general *Introduction*, are to be found only in the first volume of the edition.—“A single bracket at the beginning of a speech signifies an ‘aside.’ Four dots represent a full-stop in the original, except when it occurs at the end of a speech, and they mark a long pause. Original colons or semicolons, which denote a somewhat shorter pause, are retained, or represented as three dots when they appear to possess special dramatic significance. Similarly, significant commas have been given as dashes. Round brackets are taken from the original, and mark a significant change of voice; when the original brackets seem to imply little more than the drop in tone accompanying parenthesis, they are conveyed by commas or dashes. In plays for which both Folio and

. Quarto texts exist, passages taken from the text not selected as the basis for the present edition will be enclosed within square brackets. Single inverted commas are editorial; double ones derive from the original, where they are used to draw attention to maxims, quotations, etc."

It would be no bad plan—probably many will follow it—to re-read Shakespeare's plays right through in this edition as the volumes appear. The lightness and pleasingness of the books invite this; and these editors will see to it that the reader is kept in vital contact with Shakespeare himself.

J. C. R.

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*Working out the Fisher Act: the Human Aspect of the Continuation Schools.*

By Basil A. Yeaxlee. The "World of To-day" Series. Oxford University Press. 2s. 6d. net.

THE gloomy policy of "retrenchment" dominates, for the present, every country in the world; and unfortunately it means not merely the lopping off of excrescences but also the delay of necessary progress and expansion. In the cases of some reform-schemes the hand had actually been set to the plough, only to be withdrawn hurriedly till the coming of better times. The British Government has issued to spending departments the order that "except with fresh Cabinet Authority, schemes involving expenditure not yet in operation are to remain in abeyance." The Fisher Education Act is one of the measures the operation of which is thus delayed: the working out in practice of the Continuation Schools, so far as it depends upon Government financing, must wait. But a good deal of the work can be carried out by private bodies, while the entire scheme will certainly be brought into operation in a 'few years' time. It goes far to solve, for England, a problem which in India is equally urgent; and this book expounds its usefulness, and the responsibility it brings to teacher, parent, employer, and education authority.

The act provides for the compulsory education of both boys and girls beyond the age of fourteen, the age at which, formerly, compulsion ceased. Eventually, compulsion will be applied up to the age of eighteen. At fourteen, pupils may cease their full-time studies in the ordinary schools, and go to work; but, for a fixed period, they must attend day continuation schools for 320 hours in the year (though any local authority may for some years reduce the number to 280). The whole idea is that of looking after children who have to make an early

beginning with wage-earning. Is it a misfortune that so many have to do this? Opinions differ widely. Some will never be satisfied until *full-time* schooling is enforced upon all up to the age of 16 at least. Others consider that by the age of 14 the average child has got all, or nearly all, the good he is likely to get out of regular schooling. It is a new, and rather startling, idea that, instead of keeping children at a day-school as long as we can get them to stay, we should actually encourage their leaving, and beginning to "work," at 14, with the proviso that they shall attend continuation schools; but there is reason in it. Sir Robert Blair, Chief Education Officer to the London County Council, writes thus:—"The majority of 'young persons' will lead a wage-earning existence. The age of fourteen is critical. The physical changes are giving rise to new thoughts, new desires, new hopes. Boys and girls at that age are regarding school as a preliminary to something greater. Their eyes are looking through the school windows to what they regard as reality without; budding manhood and womanhood are 'building castles in the air.' To some school-life has become an unavoidable restraint, many who have not 'shone' are dissatisfied with themselves, and for a large proportion at the top there has been, in general terms, too much marking time. For all these a further period of two years would be irksome and unsatisfactory. After nine years of school life a break is desirable, and education can, with great advantage, take on new forms. Herein lies our second chance." There is the further point that the continuation schools system avoids that "clean break" between study and occupation which so often results in total and permanent neglect of the former when schooling is once over. The new system combines "earning" with "learning" and courses may be so planned as to relate the two. As Mr. Yeaxlee says, "People who are not going to be students by profession all their lives ought none the less to be cultured. Their culture should be inwoven with their occupation." This does not mean that the course in the continuation school should be vocational: it must be in the highest sense educative. It has to do with the time of life when both mind and imagination are most susceptible to training: to stimulate and develop these must be the object of such classes. In industrial districts there will be many a fight about this, for local authorities are left to plan their own courses and the industrialist will sometimes esteem most highly whatever course provides him most speedily and cheaply with competent labour. This has already been exemplified in the appeal of the local authority in one industrial centre, which contended that its scheme (a vocational one) should be supported because the special industry of the town must be maintained

by providing a good supply of technically trained boys! But the courses should as far as possible be connected with the daily work of the pupils, for this will give interest both to the work and to the study. As the Birmingham local authority has said,—“What bulks most largely with the boy of fourteen years of age who has just left school is the fact that he is now a wage-earning unit of society, and he is inclined at this stage to regard everything else from its bearing upon his occupation and the activities centring round it. For this reason it is proposed to start from the centre of interest for the time being—his occupation—and to extend outwards therefrom.” The same very important point is emphasised by the Labour Party Advisory Committee on Education,—“It will probably be found that the best service which the schools can render is not to attempt to give technical training, but to lay the foundation of intelligence and general knowledge upon which special training can afterwards be based. But the appeal of general education will be strengthened, and the interests of young persons in it will be increased, in proportion as it is related to their own experience and to the practical work in which they are engaged.”

This is only one of the practical points raised in the application of the act. Mr. Yeaxlee goes into the whole matter, and writes hopefully and with enthusiasm. The book is full of information and of interest.

*An Elementary Treatise on Differential Equations and their Applications.*

By H. T. H. Piaggio, M.A., D.Sc. G. Bell & Sons. 12s. net.

THE study of Differential Equations is a natural sequel to that of the Infinitesimal Calculus. The subject may be considered to occupy a central position from which different lines of development extend in various departments of mathematics. Even on the formal side too it has many interesting applications. Nevertheless in the English language, barring Forsyth's classical treatise, there are really very few useful books on the subject. Dr. Piaggio's book is therefore not unwelcome, and its value is the more enhanced on account of certain topics, otherwise available only in the transactions of learned societies, being collected for the first time within the pages of a single text-book.

The method of sketching rapidly the general form of the family of curves, called characteristics, representing the complete primitive of  $\frac{dy}{dx} = f(x, y)$ , including the neighbourhood of singular points, has been taken from Takeo Wada's paper in the *Memoirs of the Kyoto University*

(July 1917). Again, to Runge's methods numerically approximating to the solution of an equation are added those of Heun and Kutta from the *Zeitschrift*, and the author's own variation which was first published in the *Phil. Mag.* for June 1919. In the case of Partial Differential Equations it has been pointed out by Forsyth that all the integrals of Lagrange's linear equation should be classified, but it was only in a recent paper in *Proc. London Math. Soc.* (1917) that Prof. M. J. M. Hill showed that in every case where special integrals exist they can be obtained by applying a suitable method of integration of the Lagrangean system of subsidiary equations.

With such merits to recommend Dr. Piaggio's book, it is really regrettable that in matters of pure theory the book is both deficient and inaccurate. He has excused himself by saying on p. 4 that "the student will see that this is not always justifiable," on p. 54 that "this assumption requires justification," on p. 65 that "the arguments will be based upon geometrical intuition and the results cannot be considered to be proved."

M. T. N.

*A first Course in Nomography.* By S. Brodetsky, M.A., B.Sc., PH.D.  
G. Bell & Sons. 10s. net.

GRAPHICAL methods are convenient for certain calculations in mathematics, but are obviously restricted to representations involving only two variables. Nomography is a natural extension of these methods where-in the above restriction is got over and much beauty is added to the work by having to use only collinear points. This name is only about forty years old, and Lalanne was the first, in 1841, to construct a Nomogram. The subject has gained importance and recognition particularly in engineering practice, and is the product of French genius. But for one or two magazine articles, it is novel to the English language, and Dr. Brodetsky has at once succeeded in selecting suitable material and presenting the same in the most attractive manner that anybody could expect. It is doubtful if the conservative secondary school will readily absorb this new subject into its syllabus, but it is bound to be of the most practical importance. Dr. Brodetsky's book of about 130 pages could not naturally include all that is found in d'Oeagne's classical *Traité de Nomographie*, but the whole of chapter VI in the latter book, "Théorie générale; développements analytiques," need not have been omitted, nor the "systèmes mobiles," nor "abaque tangentiel" and similar interesting examples in Chapter IV, Dr.

Brodetsky's book is only a First Course, and by its excellent exposition will rouse a demand for more advanced Courses as well.

M. T. N.

*Calculus for Beginners.* By H. Sydney Jones, M.A. Macmillan and Co. 6s.

*A First Course in the Calculus.* By William P. Milne, M.A., D.Sc. and G. J. B. Westcott, M.A. G. Bell and Sons. 8s. 6d.

MARK Twain somewhere says that "humour is out of place in a dictionary"; and it is perhaps equally out of place in a text-book on science, particularly in a text-book on Mathematics. The task of reviewing such a book, therefore, is bound to be wearisome. The propositions, their proofs, and even the order of arrangement are all stereotyped; and the writer may not adopt an original plan, unless under special sanction and privilege. Thus the justification of the publishing of a new volume lies only in the rise, in recent days, of different classes of students, with varied needs and opportunities. Mr. Sydney Jones's "*Calculus for Beginners*" attempts to satisfy the requirements of "ordinary pupils," "who desire a working knowledge of the subject, sufficient for practical application in simple cases." A survey of the work convinces us that this purpose must have been before the writer's mind at every step of his undertaking. The first principles and the fundamental operations of differentiation, trigonometrical functions, integration, the various theorems, maxima and minima, receive just that amount of detail in presentation which a boy of average ability can follow. One noticeable feature of the book is the constant attention paid to the illustration of the practical application of the calculus. Hence we find almost all the exercises and examples—of which "here is God's plenty"—based on Physics, Chemistry, and Statistics. The book ought really to be of great help to students, because, as Mr. Jones points out in the Preface, the omission of some chapters would bring the book down to the level of beginners, while the inclusion of them would make it sufficiently elaborate for the purposes of a senior student. It is to be hoped that the book will meet with the encouragement it well deserves.

The other book on Calculus which we have before us is a good complement to Mr. Jones's book. While the latter treats of the subject in the orthodox fashion of "arithmetical logic," the "*First Course*" makes free use of the graphical methods. The difficult points are

everywhere rendered intelligible by making appeal to the "geometric imagination" of the student. Again, the treatment is very elaborate, indicative of punctilious solicitude on the part of the authors to "do things thoroughly." The famous motto of the mathematician, "Quick and sure," appears to have no place here. It is difficult to pronounce any definite verdict on the merits of this work. For although the slow-witted members of a class might recognise in it an unmixed boon, their more active brethren would be wearied by such ponderous elaboration. There is no doubt, however, that the book does serve a useful purpose when used for occasional reference.

S. V. R.

*Elementary Chemical Calculations.* (For the use of S.S.L.C., Entrance, Intermediate and First Year B.A. students.) By K. N. Kini, B.A. (Hons.). B.B.D. Power Press, Bangalore City. Re. 1

MR. KINI deserves the gratitude of students for bringing out this booklet of 48 pages, in which he proposes to lead them through the technicalities of mathematical chemistry. Problems relating to volumes and weights of gases, equivalent atomic and molecular weights, empirical formulæ and normal solutions are treated in successive chapters. There are short expositions of the main principles; while the indispensable tables of logarithms, saturation pressures of water, atomic weights and so on appear as appendix. The book is, however, by no means perfect. The expository paragraphs do not stand out distinctly from the sections devoted to the working of the problems; the solutions, clear and concise in general, occasionally sacrifice intelligibility to brevity; and—a graver blemish than the others—no line of demarcation seems to be drawn between the problems intended for the S.S.L.C., the Entrance and the First Year students. Yet, in spite of these defects, the book can certainly claim attention from the persons for whom it is prepared.

S. V. R.

*An Intermediate Text-book of Chemistry.* By Alexander Smith. G. Bell and Sons. 9s. 6d. net.

*A School Chemistry for India.* By F. R. L. Wilson, M.A. and G. W. Hedley, M.A. Oxford University Press. Rs. 4.

MR. SMITH has established a reputation as a writer of excellent text-books on the subject for which he is responsible in the Columbia

University. His recent production, which strikes us as in no way inferior to his earlier works, is named "Intermediate" "because," as the author declares in the Preface, "it is longer than the Elementary Chemistry and shorter than the College Chemistry." This sentence indicates the nature and contents of the book. The non-metals, the metals, chemical calculations, formulæ, acids, bases and salts, valence, organic substances, the molecular hypothesis, the periodic system, are all dealt with in an illuminating way. Two chapters (XXXI and XLIII) explain carefully the procedure to be adopted for the identification of substances, non-metallic and metallic. Chapter XXXVII catches attention as somewhat peculiar, containing as it does a very useful "account of agricultural chemistry," and an equally useful "discussion of foods . . . and other practical applications of chemistry." We must also mention with special approbation the list of admirably selected questions which concludes every chapter. This list is a double blessing, as it helps the students to recapitulate what they have studied, and furnishes them with some fresh information. The book sets forth the subject with just those details necessary to gratify the appetite of the student who is already conversant with elementary chemistry but who is yet unprepared to specialise in the subject. This chemistry book invites reading, for it does not terrify one with alarming collections of properties and methods of preparation. With its paragraph headings in big characters, and the important words and sentences in bold print, with its easy, clear and scientific style, the book is one which every student ambitious of mastering chemistry might desire to possess.

The "School Chemistry for India" does not set forth a store of chemical knowledge in the stock manner of text-books, but is essentially a laboratory guide book. And it is a splendid book in its own way. "The aim of the authors," it is plainly stated in the Preface, "has been to arrange for the pupil to find out as much as he can for himself." The pernicious tendency to depend entirely upon "cram-books" has been prevalent too long, and any attempt to make our students conduct experiments, observe phenomena, and acquire knowledge for themselves will receive the warmest appreciation from all persons interested in their progress. In the *Chemistry* under review complete directions are given for the conduct of experiments; the apparatus and the substances needed are catalogued; and the methods of entering the records and drawing the inferences are pointed out. Wherever it is necessary, the authors have explained the calculations, and shown how to arrive at the required results. It is impossible to expect from our schools familiarity with all experiments described in the book. Nevertheless



a judicious use of the book, combined with the teacher's continual supervision, may well place the learning of chemistry on an entirely new basis.

S. V. R.

*Zoology for Secondary Schools in India.* By W. Rae Sheriffs. Macmillan and Co.

THE author of this little book wishes that it should be a companion to Mr K. Rangachari's "Botany for Secondary Schools in India." But the present book is conceived on a totally different plan, and the methods of treatment also are quite different. Mr. Rangachari introduces the pupils to Botany through *Tribulus Terrestris*, an extremely common plant, and begins thus,—“All of you have seen and are acquainted with the *Tribulus* (Tam. *Neringi*) plant;” while Dr. Sheriffs begins,—“The simplest living animals are the Protozoa (first animals) which consist of but a single cell. This cell, the unit of living matter, is a drop of a very complex translucent jelly-like substance named Protoplasm (first slime) which Huxley defined as the physical basis of life.” The adoption of the principle “from the simple to the complex” lands the author on dangerous ground, for he really begins with the unknown, at any rate to the fourth form pupil. The poor child is expected in the frontispiece to know something of the Sexual Dimorphism and Warming Colouration of *Hypoclinemus Nisippus* and *Danais Chrysippus*, and incidently of Mimicry also? We may give another instance. The pupil is introduced to the study of Fins thus,—“The paired fins are the limbs and are of two kinds, the archipterygium (old fin) found in the *Dipnoan Ceratodus*, where there is a central axis composed of separate parts (basals) with radials given off to each side. The other type common to all other fishes is the Ichthyopterygium (fish fin) without an axis, but with the radials rising on one side of a few basals. In the Teleosts the fin consists mainly of very fine fin rays attached to the radials.” Then as for the study of the fish tails,—“the tail is protocercal (first tail) or diphy-cercal (double tail) where it is really symmetrical about the axis,” etc. Then as regards statements of facts,—“It (*Loris Gracilis*—the author may have adopted the revised name) feeds on fruits and insects and during the day sleeps rolled up into a ball suspended from a branch.” This is as incorrect an observation as the following is untrue. “The Chunam Frog, *Rhacophorus Maculatus*, leaps from place to place by means of the adhesive discs on its digits.” It may be pointed out that *Langur* occurs in Mysore and no doubt in the South also. Then the hedgehog

is not at all common. As for science, we have such statements as the following:—"In the above-mentioned animals, *Amphioxus*, *Balanoglossus* and the Tunicates, no back-bone develops, for the notochord remains permanently as the central supporting axis of the body." "The coelom of the chordates arises from the primitive gut." Surely not of all. On page 100 there is a photographic reproduction of a living *Dolichoglossus* labelled *Balanoglossus* which gives quite as wrong an impression of the animal as the etymology "the acorn-tongued worm" given below the figure. The proofs do not seem to have been carefully read, for there are spelling errors like "tenacle" (p. 12) in very conspicuous places. The term "tail," on p. 25 must be used in a sense not usually recognised in Zoology, for earthworms have no "tails," and I believe the earthworm usually brought to the Madras Colleges for practical study is *Megascolex* and not *Lampito*, if the author refers to the common Madras worm. There is no *Argiope* in Fig. 78, and instead of a photographic reproduction of a stuffed specimen of *Calotes*, which gives a very wrong impression of the running or standing of the animal, the excellent woodcut from Boulenger's *Fauna* and that of the Cobra from the same source would have been infinitely better.

I have carefully read the book and am of opinion that it will be a bad compendium for the B.A. students to revise their study with just before the Degree Examination, nor is it an example of what a secondary school book ought to be.

C. R. N.

*Technical Electricity. (Life and Work Series.)* By S. G. Starling, B.Sc. A.R.C. sc. Macmillan and Co. 3s. 6d.

THIS is indeed an excellent book. It completely answers to the expectation one forms of it from the publisher's note and the author's preface. Messrs. Macmillan and Co. are issuing a number of small books arranged under the class-denomination "Life and Work Series," which series is intended to supply the needs created by the Education Act of 1918. As a result of that Act, the work in the elementary schools has been much extended in scope, and the old elementary text-books have naturally to pass out of use. Mr. Starling's book "is addressed to students who require instruction in Electricity of a practical kind." And hence it dispenses with the mystifying details of advanced theory, and the numerous differential formulæ. In the fourteen chapters of the book, the important effects of the electric current, electric lighting, the electric arc, cells and batteries, dynamos and the motor are all treated

briefly, clearly, and with the needs of the student of practical electricity always kept in view. A delightful feature of the book is the skilful way in which the practical applications of electricity, such as the electric bell, the buzzer telegraph, the telephone, the incandescent lamp and electric heaters, are described. The book will be of use not only to practical students, but also to persons who are interested in the subject, but who have no elementary teacher at hand. From it they may easily get information about such common things as the telegraph, electric lamps and house-wiring, and as a result there will be fewer melancholy head-shakes implying ignorance.

S. B. I.

*An Introductory Reader in Civics.* By E. E. Houseley, B.A., B.Sc. (Econ.). Harrap and Co.

THIS book deals with the rights and obligations involved in good citizenship. It begins by describing an ideal city, or "Jerusalem" as the author calls it, where everything is as it should be. The author proceeds to give a simple and good description of the machinery of the British Constitution. The important principles of the science of Civics are told in an easy language that consistently avoids technicality, and the semi-humorous manner in which they are presented and briefly discussed ought to please every young reader.

Mr. Houseley brings the civic ideals home to the British lad's heart by the clever trick of interlarding his book with stock quotations from good old Will Shakespeare and the very popular Tennyson. If young people are to be educated according to the approved modern methods an early introduction to Civics is indispensable. And the book, as it undoubtedly helps to create and develop the civic conscience, may gladly be recommended for use among general readers and students.

G. S. S.

*A Brief History of Modern Europe.* By William Glover. George G. Harrap and Co. 2s. 6d. net

THIS small book is written with the aim of giving the general reader "a plain simple straightforward narrative of European events" from the conclusion of the Napoleonic wars down to the recent great war. To understand fully the causes and circumstances which led to the recent great war, we must go fully into the history of the 19th

century. A study of the events of this period would show that this war was their natural outcome in due course. The modern ideas of democracy and nationality are the legacy of the French Revolution. The Congress of Vienna and its failure show clearly the mistakes of a reactionary and short-sighted policy. The reactionary statesmen of Europe, in the first enthusiasm of their victory, were blinded to the importance of the principles of democracy and nationality, liberated by the revolution, and they wanted to set back the clock of progress. It was not long before they were made aware of the preposterous nature of their actions. The history of the 19th century is a history of the successful working of the principles of democracy and nationality. The people and nations of Europe defied and fought against the reactionary proposals, and everywhere in Europe autocracy was pulled down and the liberty to develop on national lines was asserted. The violation of these principles once again was the cause of the recent war. These points are brought out in this small volume.

The national aspirations of Germany and Italy became accomplished facts in the last century. The important stages in the unification of the two countries, and the aims and achievements of the militant Empire of Germany which gave a clue to her foreign policy, are set forth lucidly. The rise of the subject nationalities of the Balkan Peninsula which is said to be the chief storm centre of Europe, and the motives of the great powers which interfered in this theatre to safeguard their own interests, are sketched clearly.

The colonial expansion of the chief powers and their interests in the countries of the East form another interesting feature of the period which is also dealt with.

The book concludes with a brief survey of the recent war and the Peace Conference. The narrative is in very simple and interesting form and it will be useful to the general reader besides being for the college student an excellent companion to more advanced text-books.

U. A.

*A Short Sketch of European History.* By H. E. Marshall, A. and C. Black, Ltd. (Messrs. Macmillan and Co., Agents.)

THE author's purpose, as is indicated in the preface, is to write a book fit for young pupils who are new to the subject. It is a mistake to make them read, among their many subjects, in the short time given them, histories overloaded with details and intricate politics. What

they require in the High School classes is a grasp of the general and broad movements of history—the origin and growth of peoples, institutions and states—and not too many details, which confuse their minds and make them lose sight of the more important factors. This book serves this purpose admirably.

The book is an excellent sketch of Mediæval European History from the fall of the Roman Empire to the Reformation Movement. The period covered by the book forms one age in the History of Europe, dealing with one set of civilizations. A broad survey of the origin, growth and the decline of the ideas, peoples and institutions of those times is given. The factors that affected and influenced their growth and decline are well brought home to the mind of the reader. The invasion and settlement of various barbarian tribes, the rise of the Franks to power, the foundation of the Holy Roman Empire, the growth of the power of the Church, the development of Feudalism, the struggle between the Empire and the Papacy, the Saracen and Turkish elements and their significance, the development of the several states of Europe and the gradual decline of Mediæval ideas and civilization are all clearly set forth in easy and simple language. The book runs down to the Reformation. It closes with the Reformation since the Reformation marks a definite break with the past.

It is an excellent book for young students in the sixth form and the Entrance classes. It would have made a suitable text-book for the Entrance Examination if European History were one of the subjects in the curriculum. Generally Mediæval European History is felt by beginners to be a confusing period, and a book of this kind will serve to give them a grasp of the main factors that moulded it.

U. A.

*The Tradition of the Roman Empire.* By C. H. St. L. Russell, M.A.  
Macmillan and Co. 6s. net.

THIS is a comparatively small book but it covers the whole of European history from the incoming of the great races to the Great War of 1914. It is divided into two parts, the first being introductory and dealing with the settlement of Europe and with the empires that rose and fell, first in the East and finally at Rome. The second part is concerned with the growth of the idea of European empire (first entertained by Rome), which soon caught in its meshes all the continental countries and intrigued the imaginations of ambitious rulers. It is a very fascinating tale.

In the early years the absence of diplomacy, as we understand it, simplifies the story but when the strife between heathen and Christian gives place to the rivalries between Christian princes the complexities of political cross-purposes raise difficulties and it is here that Mr. Russell's work is particularly illuminating. In spite of its brevity it is much more real history than many of its predecessors in the same kind, and though it is perhaps impossible to deal even-handed justice among so many warring elements Mr. Russell does not sin more than his traditions.

The book shows learning and skill of treatment and is the sort of guide needed to set the right direction to the study of European history. It has an appendix of maps and notes.

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*A Short History of the Great War (for Young People).* By T. O. Hodges. Macmillan and Co. 3s. 6d.

THE purpose of this book is indicated by its page-heading—"History of the War Reader." Not merely is it for young people: it is intended as a school text-book. The author tells us that it is intended mainly for *Indian* schools and colleges. Surely this is a mistake. The book will make an excellent text-book for European schools in India, but its subjects unsuits it for prescription for study in Indian schools. The Indian schoolboy ought, of course, to have his thoughts again and again directed towards the Great War, and it is up to his teachers to bring it home to him that the war, and its results, are as important to India as to any part of the Empire; but it is too much to expect that he should be given as his school reading book one that deals exclusively with the war. This apart, however, Mr. Hodges' book may well enjoy a wide and salutary popularity in India. While the style of his narrative is quite simple enough for the schoolboy it has nothing of the affected familiarity, the terribly grown-up childishness, of so many books intended for the use of "young people." Mr. Hodges' style, in its purity and directness, is an admirable model, and since there is nothing of the "book for children" about this book except an always desirable clearness and simplicity, and since Mr. Hodges is as clear-cut in his arrangement as in his phrasing, this brief account of the war should interest everyone. It is a very useful little reference-book on the subject; and it is also a book that can very quickly and pleasantly be read through—and should be by people who as yet have but a hazy notion of the outline of events. Some of its rivals, however, score over it in the matter of illustrations. This book is without pictures, though it contains a few maps.

*The Story of Madras.* By Glyn Barlow. Oxford University Press. Paper, Re. 1/- Cloth, Rs. 2/-

THIS book gives a popular account of Madras, partly historical and partly descriptive; and its purpose is to help the reader "to realise that the city of Madras is a particularly interesting corner of the world." Mr. Barlow could make dry bones interesting, but here he finds a subject in itself delightful for, besides having a most interesting history, it is in its way a most beautiful place, and there are few corners of it that have not their romance for the historian. The first chapters give a lively account of the history of the place, from the time (three hundred years ago) when it was the tiny village of Madraspatam and Mr. Francis Day, of the East India Company, was welcomed there by the Portuguese settlers of Mylapore. In the remainder of the book various Madras buildings and various sides of Madras life, are dealt with in some detail. Mr. Barlow's maps, and his many illustrations, are admirable.

*Tales of King Vikrama.* By C. A. Kincaid. Oxford University Press.

MR. KINCAID continues his good work, and is a benefactor not only of Indian children but of all who care for old romantic story. We have already reviewed several of his story books, and this is like the others in its interest and its pure, simple, familiar style. This translation was made originally for Mr. Kincaid's own children. It is from the Marathi version (1830) of the *Vetal Panchvishi*. Sir Richard Burton had translated eleven stories from the Hindi version, but Mr. Kincaid's work was done before he had heard of Burton's. Further, either the Hindi version or Burton's translation of it differed so much from Mr. Kincaid's Marathi original that between the stories as told by Burton and as told by Mr. Kincaid there is little resemblance. There is the further fact that the latter has translated all the twenty-five stories. Thus we have here something that has never been "Englished" before. English children will love the book if they are fortunate enough to find it, and no doubt it will have its value for the student of folklore; but above all it will be a treasure to the Indian child. One cannot conceive any book that would (whether prescribed as a school text or merely read at home) more delightfully sugar the pill of the English language.

## COLLEGE NOTES.

VERY few Notes have been received for this issue—naturally, since there is little to chronicle at the beginning of a term. It was hoped that the Annual Report of the University Union in Mysore City might appear in this issue, but it must be deferred till next since it has not been possible yet to hold the annual general meeting, to which the Report will be submitted.

### Maharaja's College.

THE term opened sadly with the death of Mr. Bapu Subba Rao, Junior Professor of History, and one of the most beloved and honoured members of the college staff. The College was closed for a day as a mark of respect and sorrow; and the members of the Union took the first opportunity of conveying to Mr. Subba Rao's relatives a message of profound regret. At this meeting of the Union the following message from the Principal was read :—

“ I should have very much liked to be present and give expression to my feeling of admiration and respect for Mr. B. Subba Rao, whose pupil it was my privilege to be during my High School years. Mr. Subba Rao rendered splendid service to the College both as a teacher and as warden of the hostel, the duties of which office he performed with remarkable ability and zeal. His interest in education led him to take an active interest in the local schools—in particular the night schools, in whose social utility he had great faith. He also played an important part in the social life of the city, and there has not been a single movement which touched the lives of the citizens of Mysore which did not seek and obtain his enthusiastic support. His friends will bitterly lament that his active life was not crowned with a few years of quiet and ease.”

The following notes on Mr. B. Subba Rao's life have been received from a relative :—

“ ‘There are some in the world whose lives it is better for us to forget; but there are others of whom we may say that the life and the service to society alike claim our interest for their nobility and excellence, and whom we admire for being what they were as well as for



doing what they did.' Of these was Mr. Bapu Subba Rao. During the past twenty-five years he has lived and laboured in Mysore as a loyal citizen, educationist, journalist and supporter of all good works. He was admired by the public of Mysore, not for his position in the service, but because he possessed certain sound principles to which he clung to the last. He had just completed his fifty second year when he breathed his last on the 2nd July 1921.

"Mr. Subba Rao was descended from the famous family of Bapu—a family which produced many an eminent and influential man. His father, Mr. Bapu Raja Rao, was a sheristedar, and his uncle, Mr. Bapu Raghunatha Rao, was a popular Amildar of the Mysore Service, and a remarkable person. Mr. Subba Rao's father lived to a good old age, but his mother, to the misfortune of the boy, died very early.

"As a boy Mr. Subba Rao showed both ability and character, as well as a particular fondness for games and the varied life of the open air. Having passed the F. A. examination, from the Maharaja's College, Mysore, he proceeded to Madras to prosecute his studies in the Christian College. He was not, like many of his friends, a book-worm. He was always cheerful, full of youthful vigour and tender feeling, ready for his lessons and ready for fun. He took his B. A. degree in the year 1891. Thereafter he desired to study for law, but circumstances did not permit of this. He took the post of assistant master in the Maharaja's College in the same year in which he took his degree.

"Mr. Subba Rao's ability, his simple and straightforward habits, and his fondness for sport won for him the full appreciation and confidence of both Mr. Weir and Mr. Denham. Amidst many changes, doing increasingly useful work, he remained in the same institution till his death. He might have said—

'Men may come and men may go,

But I go on for ever.'

While he was an assistant master in the High School department of the college, he devoted some of his time to the study of Indian History. A few years after he joined service he was raised to the position of lecturer in History, under the régime of Mr. Weir. Still later, under the régime of Mr. Denham, he became an assistant professor of History, and after the establishment of the Mysore University he was made junior professor.

"As a teacher Mr. Subba Rao was remarkably successful. His teaching lacked perhaps the easy flow of the orator, but it was impressive, and full of familiar anecdotes, brilliant wit and sympathetic humour. His memory for historical incidents was great and was paralleled by immense local knowledge. There are many in Mysore and outside Mysore

also who spent several years at the feet of Mr. Subba Rao and now occupy high positions in government service, among them being our present principal, Mr. N. S. Subba Rao. Mr. Bapu Subba Rao commanded very great respect in the College, and after Mr. Denham he was regarded as the grand old man of the College, both by the staff and by the students.

"Besides being a member of the staff of the Maharaja's College, Mr. Subba Rao was till recently the Superintendent of the College Hostel. During his régime he introduced many an effective measure for the smooth working of the institution. The unique position which the Hostel holds at present is entirely due to the untiring personal supervision and the healthy influence of Mr. Subba Rao.

"Mr. Subba Rao was well known even in the remote parts of the 'Karnataka' country, as the editor of two Canarese journals, *Vidyadayini* and *Karnatakagranthamala*. Mr. M. Shama Rao (the retired I. G. of Education) had for some time a hand in the editorship, but eventually Mr. Subba Rao himself had to take the full burden. Both the journals have a wide circulation in Mysore and outside. The *Vidyadayini* is purely a journal of education, dealing with important topics concerning the teachers and the taught, whereas the *Karnatakagranthamala* is a literary journal.

"Mr. Subba Rao was well known to the public of Mysore City as an efficient organiser of the city Co-operative Society. He was the founder of the society. While he was its secretary he directed its work into various lines of public utility. The beneficial work which the society turned out during the years that followed its foundation was incalculable, and the success of this society was due to his personal supervision. Seeing that his health might be affected he gave up his secretaryship a few years ago.

"Mr. Subba Rao's life was very well lived. He was a man of methodical habits. He had a deep sense of duty and a firm conviction of the purpose of life. His sympathy and mild behaviour won him friends wherever he went. He would assist to the best of his ability any that sought his help. He was happy and cheerful, and in fact he was a friend both of the old and of the young. It was only recently that his enthusiasm and activity were slackened, owing to a weak heart, to which weakness at last he succumbed. He was quite gay and active to the very end. He met the inevitable hour in absolute composure. Mr. Subba Rao's private life was as fine as his public. He was a good son, a good brother, a good husband, a good father and a good friend. He would always be happy in the companionship of his friends and relatives,

and happier still in the companionship of his own family. What a noble soul we have lost in his death—how good and how kind!

L. B. R."

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**The Kanada Association.**—This year we are fortunate enough to have amidst us a great number of enthusiastic students of Kanada. And though so far no meetings have been held, yet there is every certainty of carrying on our business with as much zeal and earnestness as last year.

Our popular and painstaking Vice-President Mr. B. Krishnappa, M.A., is willing this time to conduct a bi-weekly or quarterly periodical, provided the students of Kanada come forward as subscribers to the magazine, which will be entirely in Kanarese.

There is another equally great desire among the students of the College that requires the attention of the Association. Encouraged and profited by the two Harikatha performances of last year, the students are very eager to attend some more of them. The only difficulty lies in the fact that the Association is short of funds; and if the students voluntarily subscribe, we do not see any objection to including Harikatha performances in our coming programme. Last year our universally popular and generous-hearted Principal, by providing us with necessary funds, enabled us to have not only Harikathas but also the reading of "Turve Ramayana." I think it would be taking undue advantage of his generosity if we were again and again helped by him. For his munificent help in this and other matters I once more thank him very heartily in the name of the Association.

Our dramatic activities were an important part of last year's programme, and this year we are even more ambitious. "Dhruva Charitra" has been considered to be a good drama for our purpose; with the kind co-operation of all the members of the Sangha, the dramatic performance will be an easy matter this year.

I appeal to all students, and to the new students in particular, to take a very active part in all the activities of the Association.

MOHAMED VALIULLA,  
*Secretary.*

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### **The Engineering College.**

THERE is not much to record since I wrote last.

The College opened its session on the 1st of July as usual. In spite of the adverse conditions in the local Engineering market there were no less

than a hundred applicants for admission to the first year class, and more than half the number had therefore to go away disappointed, the seats being limited to forty-two. Only some graduates and some picked Entrance men could get admission.

The fourth year Civil students have been out on a combined Railway and Irrigation inspection tour to Chickajajur, Chintaldrug, Hiriyur and Marikanve. The tour, without doubt, proved interesting and instructive. A pound of practice is worth a ton of theory in the class. The fourth year Mechanicals also have been on tour to Kolar and Madras. The second and third year students have been out on their surveys. So there was not much doing within the four walls of the College for the first three weeks of July.

It is rumoured that the combined Gymkhana scheme of this and the Central College has not been running smoothly, and hence a divorce has been ordained. But the partition of funds allotted this year for sports is a hard nut to crack, and it remains to be seen how this is amicably effected. The Gymkhana activities of this College are therefore *nil* so far.

We have now the full complement of our staff in the College by the advent of Messrs. R. C. Paranjoti, B.A., B.E. (Mechanical), and M.A. Ramanujam, B.A., A.C.E. (Civil).

I am sure there will be more to record in the next issue.

K. D. Joshi.

## THE PRESS AND THE UNIVERSITY.

SINCE our editorial on "The Newest Dispensation" was written there has been a continuous correspondence in the *Bangalore Daily Post* with reference to the points raised in the "scheme" to which we referred and which had been printed in that paper. This correspondence is a sign of a most gratifying public interest in the University, and similarly the enthusiasm and activity of the propounder himself will no doubt prove a valuable asset. The University has long had to complain of apathy, and criticism is much better. The *Post's* encouragement, too, of correspondence relating to University matters is much to be appreciated. We hope that the discussion that is going on will focus public attention more and more closely upon the University, and lead, incidentally, to increased financial support. We are afraid, however, that this particular correspondence will lead to no useful conclusions as to "university reform." The step from apathy to criticism is a very wide one: there should be the intermediate stage of enquiry; and in general the suggestions contained in the many letters to the paper are very far from being "according to knowledge." The discussion had a bad start. It is unusual for a layman, upon his election to a University body, to begin by formulating a scheme of his own, without regard to anything that has preceded his efforts. Even in educational matters, wherein everyone considers himself a legislator, this is an exceptionally confident proceeding, and justly to be resented by those who have had the opportunity, and have taken the trouble, to learn how things came to be as they are. And a very prompt and natural nemesis follows. A "scheme" so propounded gives itself away at once, for there is not enough knowledge behind it. It is quite useless to take a few details of systems current in foreign countries and call their combination a scheme for Mysore; and the absurdity is heightened when there is an obvious lack of knowledge not only as to *why* the present system obtains but also as to *what the present system is*, and in particular what are the functions of the chief officers of the University. In the present "scheme" there is evidence of even more striking ignorance, as when it is laid down that *each* professor shall admit students to his own department—as if the professor of each subject had a separate lot of students. Thus it is impossible for those who have intimate knowledge of the working of the

University and its colleges to argue seriously on the merits of such a "scheme." A scheme must have a certain basis of fact and experience before it can be useful as a starting-point for discussion; wherefore the officers of the University have been conspicuous by their silence in this correspondence. Of others who have written letters no two have thought alike. It would have been much better to wait a little till the responsible committee of the Senate which is going into the whole matter, under expert guidance and with all information before it, had presented its report to the Senate. Then the reformer would have shared with senior members of the Senate the opportunity of expressing views in detail.—We wonder, incidentally, whether it is quite the proper thing for a senator who is about to bring something before the Senate to commit the matter, first, to public discussion. Such a proceeding, at any rate, does not commend one to the confidence of the Senate.

One letter to the *Post* must be referred to. Attention is due to Dr. W. E. Clark's views, on education or on anything else. He writes giving modified support to certain of the ideas in the "scheme." He refers to the "patent evils" of the present system, and speaks of one of its elements as being "mischievous," and of part of the suggested change as being in consonance with "American experience." Yes, but there's the rub. "American experience" is not valid for the universe, and American educational systems were not based upon a careful study of *Indian* conditions; nor is it possible for Dr. Clark to declare out of the fullness of his *American* experience, what is "evil" or "mischievous" here. It seems to be forgotten that this University is not one of the old Indian Universities, whose defects are indeed conspicuous enough. Its constitution was framed only a few years ago, and is the result both of evolution in India and of careful and competent consideration not only of Indian circumstances but also of systems obtaining in other countries. American methods were well enough known to the framers of our University; and where they rejected them they did so deliberately, judging them inapplicable to conditions here. Perhaps they even ventured to dislike some of them.

Dr. Clark directs his criticism chiefly against the "principalships as constituted at present." These he declares, are "mischievous." Indeed there has been much tilting against the principalship, with argumentation of a most curious sort. So far as we can gather, there are three arguments—(1) The principal's power may be abused. (2) There is no reason why one professor should be set over another. (3) A professor should do nothing but professorial work.—So possible abuse is an argument against authority; and whereas in every other

sphere seniority with merit confers control, a college is to be administered either by a body without a head or by someone not engaged in its work!

Experience proves decisively that college administration in India depends for unity, harmony and efficiency upon government by an individual, vested with authority. Entrust the administration to a college council, for instance—even the best of college councils—and though its members have the best will in the world, and know no jealousies and rivalries whether personal or departmental, there will in a few months be chaos. One needs only to think through the daily list of college doings and needs and problems to be assured that this is so. It is perfectly absurd to suggest that the principalship means friction. It is the only means of avoiding friction. And there is far more in it than that. It is the Indian way—it cannot be changed, and why should it?—to value above all things personal leadership. It is so in colleges, as elsewhere. The student comes in touch with several professors, and no doubt he venerates them and gets good from them all. But he must be able to think of someone as the Head of the College—someone who both rules and guides, and with whom, at the same time, he may come in contact every day. The tone of the college, the vigour and healthiness of its life, depend in an incalculable degree upon this individuality of control. It does not mean interference. Professorial departments may have, and do have, any amount of independence under a principal. For the principalship is not concerned with their special interests, but with the college as a whole and all its people. The feeling of confidence and security that the principalship brings is shared by staff as well as students, but the principal's relationship with students is what matters most.—One writer pointed out that the Calcutta Commission's Report does not provide for principalships. That is true, and the reason is that the Report contemplates only uni-collegiate universities. When there is only one college the Vice-Chancellor naturally plays the part of principal, and is able to perform all the functions we have indicated. This is impossible when there are several colleges, located in two different cities. This University contains already four colleges (people persistently write as if there were but two), and will soon contain several more. The work of general administration is such that it is impossible for the Vice-Chancellor to act as principal even of one of the colleges, not to speak of all. But indeed many critics of the University know as little of the Vice-Chancellor's functions as of those of the principals.

## SCIENCE NOTES

COMPILED BY MR. B. VENKATANARANAPPA, M.A.

*The Development of Chemical Industries in India.*—Dr. H. E. Watson of the Indian Institute of Science, in his presidential address to the Chemistry section of the Indian Science Congress, which recently held its annual meeting at Calcutta, gave utterance to some very practical suggestions in the matter of starting chemical industries in India.

He said that after the War there had been a boom in industries generally and it appeared to him that almost undue prominence had been given to chemistry; but the light-hearted way in which inexperienced people were making attempts to start chemical industries, which were pre-doomed to failure would, he feared bring chemistry into disrepute and hinder its normal development.

The following points, he stated should be carefully considered before starting any industry:—(1) capital, (2) raw materials, (3) plant, (4) technical advice and control, (5) labour and (6) disposal of products. As regards capital, he said, there might be no difficulty for a thoroughly sound industrial scheme; but though India was pre-eminently a country of raw materials it would be found, on closer investigation, that the list of materials which were not available at all or in sufficient quantity, was a considerable one. For example, copper, though actually produced in the country was, so far as the manufactured product was concerned, only a very small fraction of the total imports, owing to the smallness of the ore deposits; so with antimony and graphite; while nickel was not found in appreciable quantity at all. The immense deposits of kaolin in South India, he said, were not just pure enough for porcelain manufacture; bauxite (aluminium mineral), which was plentiful, was of poor quality; while iron, chromium and manganese, though found in almost limitless amount were of low grade. As regards the vegetable kingdom, the camphor tree when grown in India, was found to yield a far lower percentage of camphor than it did in Formosa, and the yields, even of acetic acid by distillation of the indigenous trees was lower than in Europe and America.

Even granting the existence of raw material of the requisite quality and quantity, the problem, said the doctor, was not solved. The Indian, he pointed out, was very conservative, and it was not easy to induce



him to sell his produce to a local factory except at a considerably enhanced price, which might render manufacture unprofitable. The question of the site, he went on to say, was a very important consideration and freight charges on the raw materials, the cost of fuel and the probable markets for the finished products must be carefully determined beforehand.

Turning to the question of plant, the doctor was of opinion that it was necessary to purchase certain standardised machines from firms which specialized in their manufacture, while the greater part of the plant might, with much advantage to India, be made in the country. It should be remembered, he said, that specially trained workmen and chemical engineers had to be imported, and unless there was a sufficient demand for their services, the venture would not be successful. It was also necessary, he continued, to be very careful so far as technical advice and control were concerned, and the Indian graduates who spent a year or two in some western chemical factory were not the right sort of men to run such factories in India.

Indian labour, he said, was frequently spoken of as being cheap; but it would probably be found in most cases that machinery to replace it was cheaper still.

Turning next to the most important subject of the disposal of the products of the factory. The doctor said, that there was no use manufacturing an article if it could not be profitably sold. If the article were intended for export, it should be possible to make and land it in a foreign port at a lower cost than that for which the article was sold there. Even with regard to transport in the country itself, from place to place, the question of freight was a very important one. For example, salt could be produced at 2 annas a maund in Tuticorin; the railway freight on it to Calcutta would be at least 14 annas. Aden salt, which is of better quality, could be produced more cheaply and sent to Calcutta for 16 annas a maund. The fact was that a large proportion of the salt used in Bengal came from *Liverpool* and was able to compete with both the other varieties.

The doctor comes to the conclusion that any development of chemical industries in India would, for the present, involve the solution of the problem—"What is the smallest factory for making this product that it will pay to start?"

Reviewing the possibilities of some of the industries in India the doctor went on to say that the essential oil industry was one of the oldest in India. The country was practically self-supporting as regards turpentine, while the world's supply of genuine sandalwood oil was now

**.distilled in India.** The question of extracting perfume from new sources and from hitherto unused flowers, and the production of a few synthetic perfumes from local raw materials, also deserved attention. He next took up the question of drugs and said that a great saving would be effected by extracting them before export; but as regards tannin extracts it was found that the majority of Indian tanning materials gave better results when used directly than when applied as extracts.

The sugar problem was the next to be noticed. The doctor stated that the chief difficulty to manufacture sugar on a large scale was the growing of sufficient cane in reasonable proximity to the factory. Next came the oil industries. The hydraulic press, he stated, appeared to be growing in popularity; but the probability of all the oil seeds now exported being pressed in the country seemed far off, and the by-products, such as glycerine, had not much chance of bringing in profit. It was surprising, he said, that the soap industry was carried out only on a small scale, possibly on account of the fear of the powerful combines in other countries.

The doctor next considered the possibilities of the manufacture of alcohol from mahua, of high class varnish from Indian materials, of fertilizers from atmospheric nitrogen, casein and lactic acid, glue and gelatine, tinned and dried milk, pigments and paints, sulphuric acid, soda, aluminium, thoria, asbestos, mica and magnesia. He hoped that the time might yet come when India's chemical industry was no longer an insignificant factor in her national economy but a great and lasting source of prosperity.

#### JOURNAL OF THE INDIAN INSTITUTE OF SCIENCE.

*Prof. Einstein and the Theory of Relativity.*—Prof. Einstein's lecture on June 13 at King's College, London on "The Development and Present Position of the Theory of Relativity" has been described by Lord Haldane, who presided on the occasion, as a superb performance. The lecture was delivered in German to a crowded audience consisting of many distinguished men. Though the professor was surrounded by the most brilliant mathematicians in England he seems to have had an air of easy mastery, and did not appear to think that the subject he was lecturing upon was a particularly difficult or a controversial thing. Lord Haldane introduced him to the audience as "the Newton of the twentieth century," who had "effected a greater revolution in thought than that of Copernicus, Galileo and even Newton himself." "Einstein's reasoning is the result of one of the highest achievements of human

thought. This successor to Newton has put a word upon every body's lips—relativity. But few there be who quite know what this term signifies and to what the relativity applies."

Mr. Eugene Higgins, a graduate of Columbia University and a resident of Paris offered, through the *Scientific American*, some months ago, a handsome prize of 5,000 dollars (about 20,000 rupees) for the best popular essay (containing not more than 3,000 words) on the Einstein theories of relativity. In response to this invitation 300 essays were received from different parts of the world—even from India. Some of the competitors are eminent men in the scientific world. The prize was awarded to Mr. L. Bolton of London, who is on the staff of the British Patent Office and who may be said to be "unknown in a strictly scientific sense." Mr. Bolton's essay has been published in the *Scientific American* for February 5, 1921. Though the essay is recognised as the best popular exposition of the subject, yet the general reader will find it a very hard nut to crack.

According to this theory, "lengths and times do not have the absolute character formerly attributed to them. As they present themselves to us they are relations between the object and the observer which change as their motion relative to him changes. Time can no longer be regarded as something independent of position and motion, and the question is what is the reality? The only possible answer is that objects must be regarded as existing in four dimensions, three of these being the ordinary ones of length, breadth and thickness, and the fourth, time. The term "space" is applicable only by analogy to such a region; it has been called a "continuum," and the analogue of a point in ordinary three-dimensional space has been appropriately called an "event." By "dimension" must be understood merely one of four independent quantities which locate an event in this continuum. In the nature of the case any clear mental picture of such a continuum is impossible; mankind does not possess the requisite faculties. In this respect the mathematician enjoys a great advantage. Not that he can picture the thing mentally any better than other people, but his symbols enable him to abstract the relevant properties from it and to express them in a form suitable for exact treatment without the necessity of picturing anything, or troubling whether or not the properties are those on which others rely for their conceptions."

*Social Decay and Regeneration.*—This is the title of a book by R. Austin Freeman recently published by Messrs. Constable and Co. The

author in all seriousness agrees with the Erewhonians who "destroyed all their machines and lived happily ever after. An Erewhonian pointed to the magnificent ruins of the railway station as an object of interest in his park." The book is a seething indictment of the machine as the cause of our present discontents. The decay wrought by machinery is not numerical; it is something much worse. The ultimate factor of national decline is racial deterioration, and in modern societies this is very extensive and pernicious. Unfavourable variations are not eliminated, and there is a reversed natural selection in favour of the unfit. The essential character of modern civilization is a war of mechanism on man.

"Mechanism has destroyed industry and replaced it by mere labour; it has degraded and vulgarised the works of man; it has destroyed social unity and replaced it by social disintegration and class antagonism to an extent which directly threatens civilisation; it has injuriously affected the structural type of society by developing its organisation at the expense of the individual; it has endowed the inferior man with political power which he employs to the common disadvantage by creating political institutions of a socially destructive type; and finally, by its reactions on the activities of war, it constitutes an agent for the wholesale physical destruction of man and his works and the extinction of human culture. It is thus strictly analogous to those anti-bodies by which the existence of aggregates of the lower organisms is brought to an end."

The above changes are driven home in the most forcible manner. The old craftsman who made a pair of boots and enjoyed his work, has been displaced by a crowd of factory hands, not one of whom could make a pair of boots and whose work is irksome drudgery. Machinery has changed a skilled into an unskilled population.

The manual workers are becoming frankly anti-social as well as anti-democratic. Their activities are directed, not against the employers, but against the community. "The working man tends to be a bad citizen." He plots "to starve the country into submission, to treat his fellow citizens as a somewhat uncivilized invading army would treat an enemy population." The bulk of the men no doubt do not realize that they are committing a crime against their fellow citizens; but this only proves the very low quality of their intelligence.

Society, in a word, is disintegrating. Parasitism, the curse of humanity, is becoming almost universal. "The manual labourer has long since ceased to support himself comple'y." "He has obviously arrived at the belief that he has a definite lien on the property of his

fellows." The industrious and intelligent—"the only class that matters"—are being taxed and bullied out of existence.

Though Mr. Freeman's pessimism may seem too unqualified, the justice of his strictures can scarcely be denied. His remedy, however,—*viz.*, "the voluntary segregation of the fit;" the establishment of self-contained communities of skilled craftsman and others, who would help each other to live a wholesome and happy life—is not practicable. Such a community might well be founded in a new country; the experiment would be well worth making; but in this country the new community would not escape ruinous taxation for the benefit of incapables outside, and would, moreover, be attacked and destroyed by the trade unions.

NATURE.

## EDUCATIONAL NOTES.

*Indian Students in England.*—We have received from the Headquarters of the Y.M.C.A., in Calcutta, a number of papers illustrating the work of the "Indian Students' Union and Hostel" which is run by this Association in London. The building is in Keppel Street, London, W.C. 1. It contains a hostel accommodating 98 students, a restaurant where both Indian and English dishes are served, a large lecture hall, a study room, and a library. A summer retreat by the seaside is maintained also, to which the members of the hostel go in small groups. The institution really does seem to be a place where the Indian student may be comfortable and happy, without any resenable interference and with notable opportunities of getting the best out of English life and thought. What a good time—in every sense—the members of the Union enjoy is indicated in a typical monthly "schedule,"—that for July of this year.

July 2	Saturday	..	8 p.m.	Reception to Indian and Ceylonese Visitors.
„ 3	Sunday	..	5 „	LORD HALDANE: "The Ideals of a University." Chairman: DR. S. K. DATTA, M.B., Ch.B. (Joint Meeting with the Student Movement.)
4	Monday	..	8	Administration Study Circle.
7	Thursday	..	2	Epping Forest (Tea, Tennis, and Ramble).
8	Friday	..	8	Group Conference.
10	Sunday	..	5	AYLMER MAUDE, Esq.: "Tolstoy and his Teaching."
14	Thursday	..	2	Boating Party (Regent's Park).
15	Friday	..	3-30	Annual Meeting of the Indian Women's Educational Association.
17	Sunday	..	5	MR. ARNOT: "Trade Unionism."
18	Monday	..	8	MRS. ANNIE BESANT: "Winning Indian Home Rule."

July 20	Wednesday ..	2 p.m.	Visit to the Aerodrome at Croydon.
„ 24	Sunday ..	8 „	DR. J. N. FARQUHAR: "Indian Sculpture" (Illustrated Lecture).
„ 25	Monday ..	2 „	Visit to Farningham Home for Boys.
„ 28	Thursday ..	8 „	International Evening.
.. 31	Sunday ..	8 „	Concert.

Commander Wedgewood, writing to the Secretary of the institution, declares, "Your Hostel and Union have done more to bring the races together than anything that has happened in the last two sad years;" and so far as can be judged by the literature before us this is not much of an exaggeration. The residents of the Hostel seem to find a home there, with greater comfort than lodgings provide and with the inestimable gain of fellowship. But besides this every opportunity is taken to bring them in touch with English students, with English people who are interested in India, and with great men, whether they be Englishmen or Indians visiting England. Such an institution is particularly to be welcomed because so many Indian students who go to England do nothing at all but study, and return with no treasure-trove but a degree. For the individual it is very much a matter of luck whether he comes into free social and intellectual relationship with the best sort of English people, and when he has had luck in this matter it is a misfortune for both countries. As Mr. Ben Spoor says (also in a letter to the Secretary, an Indian), "The greater part of the misunderstanding unfortunately existing between your people and ourselves is almost entirely due to the want of opportunities for personal contact." It is a great thing to have an institution that makes such contact so easy. Help of other kinds is given also. For example, there is the giving of information in a friendly way. Sometimes there is an astonishing need for information. One day an enquirer, just arrived from India, asked "Do you know if I can take a degree quickly in London and go back to India?" "What degree do you want?" "Oh, any degree will do!" "But did you not have a definite programme when you left home?" "Oh no! I was told by some friends that you can take certain degrees in London in a few months." It is strange, by the way, that Indian students do persist in going to England without making a precise programme beforehand and definitely securing admission to a college. There is such congestion in universities throughout Britain that this is a most dangerous course to pursue.

*The Joys of Oxford.*—The institution of which we have been writing conducts an interesting little monthly magazine, called *The Indus*, which we venture to pillage of an article on "The Joys of Oxford." We have found this such a potent reviver of our own Oxford memories that we think it may make Oxford live to those who have never been there. It is by Mr J. L. C. Rodrigo, B A., Oxon., Bar-at-Law.

"None, it has been said, can utter the secret of Oxford, at least until he goes down. For the casual visitor sees only buildings which he considers very much out of repair, dark and narrow streets along which innumerable cyclists madly race, and, perhaps, a few bent and aged dons hobbling across the High. The undergraduate again, is too much of a part of everything there to feel, or at any rate to express, the indefinable charm of the place, or listen to the whispers of those last enchantments of the Middle Ages. A mere graduate may perhaps be pardoned for attempting to set down on paper something of what he felt, something of the joys that were his during the four years he spent amid the dreaming spires of that sweet city. To some the account may seem partial and exaggerated; possibly it is, for a year in the dreary, dull and friendless atmosphere of London only serves to heighten the memory of days that are no more. It is pleasant merely to remember.

"And first the Freshman. He goes up timid, shy and nervous, expecting much, but fearing more; he finds others similarly placed, and a fellow feeling does indeed make us wondrous kind, and confident. The "scout" begins his ministrations, and the last traces of diffidence disappear when the delightful processes of furnishing, or rather of giving the last touches to his room, begin. The shopmen blush that such a gent should wish to pay and are more than willing to supply him with all and more than all he needs. And so the College arms, the pipe rack, the tobacco jar, the gaudy cushions, books and prints innumerable arrive, and are duly arranged.

"Then there is the joy of surprise and discovery. In these early days, even lectures seem interesting, and the lecturer, delighted with the size of his audience and their readiness to appreciate the good things he sets before them, becomes wittier and wittier as he serves off those heavy old jokes of his that have done such good work for so many generations. But the associations which cling to Oxford, and the spirits of the great men who have lived in Oxford and loved her, still haunt the streets and Colleges. Here, the Freshman feels, in this very room it was that Shelley lived and thought and wrote, and near by is the memorial that a repentant College has raised in his honour; from this pulpit Newman and Manning and Keble preached; and there in the hall of Balliol, amid Prime Ministers,



Lord Chancellors and staid Doctors of Divinity, are the portraits of Manning himself and of Swinburne with his flaming auburn hair. These he sees and feeds on, and then right through his soul there passes a delicious thrill as he realizes that he is an Oxford man, and that, however unworthy, he too is a member of that great brotherhood. But perhaps he wishes even more to see and possibly to know the "lions" of this day; in his early wisdom he sees in every man a Blue, and towards the President of the Union or of the Boat Club he looks up with feelings that border on veneration.

"As yet, the Freshman knows only few people, but he does not, in the midst of these new experiences, feel his comparative solitude very keenly. But man, they say, is a social animal and when the invitation to the first tea-party arrives, it is eagerly welcomed. This often proves the beginning of new friendships, for a tea-party is a cheerful meal without the least trace of formality, where conversation runs freely and gaily on, and one can easily make friends or at least acquaintances. Then follow long walks or cycle rides in the country round about Oxford, during which you keep up an eager flow of talk, extending your acquaintance with men and books and, above all, laying the foundations of a firm friendship based on mutual respect and mutual knowledge. Such friendships are not as wildly delirious as those among schoolboys, nor do they rest on a sordid calculation of some future benefit; they are just ties that bind men, especially young men, together irrespective of colour and race, owing to similarity in taste, outlook and aspirations.

"Loyalty to the College, and the University—and in this no one is ever regarded as going too far—is perhaps an essential ingredient in one's happiness. Those who throw themselves whole-heartedly into the activities around them not merely derive, but also afford, considerable pleasure thereby. There are societies innumerable—who was it who described Oxford as an oasis of University in a wilderness of clubs?—and in them it is possible to find diversion or edification according to one's taste or mood. The Union, of course, is the chief of them all, though it is only question time that is usually amusing; the political clubs, whatever one may think of the politics and the discussions, are certainly comfortable, and the dinners, even at the Labour Club, admirable. There is also one famous debating society, whose debates are of such a high level that the members need and adjourn for "liquid refreshment" at the end of every speech! But for really serious discussion and papers, there are Historical and Philosophical Societies, where learned young men in spectacles shatter this sorry scheme of things to bits, without, however, always remoulding it nearer to the heart's

desire. They are all delightful, these societies ; the greatest good humour pervades them, and there is seldom any of that bitterness or suspicion which makes societies elsewhere so unpleasant.

" Thus idly busy one's time passes away, and the summer term slowly comes round. Lilac, laburnum and hawthorn appear, and the whole air is scented with their fragrance. The green of the trees is soft and tender, the fields covered with daisies and buttercups. Everything seems fresh and young ; one feels that the beauty of Oxford has been heightened by the kindness of nature, and murmurs—

If on earth there's a heaven of bliss

It is this, it is this, it is this.

At such a time books are out of place, lectures even more so. The summer term is short and its charms must be seized and enjoyed before they pass away. Cricket one may have and tennis, but pleasantest of all it is to glide slowly along the upper Cher in a punt, and mooring it in some shady spot lie there to dream.—perchance to read ! Or in the long lazy summer evening, when the thought of dinner in Hall is unbearable, one may stop at some little riverside inn, and sup daintily on salmon mayonnaise and strawberries and cream.

" Days so spent are not monotonous, they have their languid charm. But Eights Week is always a welcome interruption even, or perhaps especially, for those who have no people or friends coming up. Other people's sisters are always supposed to be more interesting than one's own ! The races themselves are only an excuse ; they last for all too short a time, and afford excitement only to the enthusiasts on the tow path. A bump, however, is exciting, but then they always occur just where you can't see them. What really matters is the changed appearance of the city, the holiday spirit that penetrates the whole place. Luncheon parties take place everywhere, and once, during a pause in the conversation, there were heard these words, pregnant with meaning and throwing a light on the peculiar fascination Eights Week exercises on some—" Would you prefer to be called Dorie or Dora ?" One week of joyous life crowded with concerts, a tennis match or two, perhaps a college ball, river parties, the procession of boats, and it is all over.

" Then preparations for the long vacation begin, reading parties are formed, but before the actual departure from Oxford there comes on Commemoration Week. Few know anything about the benefactors whom that week is set aside to commemorate, and not many take an interest in the prize essays and poems read out in the Sheldonian. The distinguished persons who receive the Degree of D.C.L. come in for more

attention, though this attention is sometimes so marked as to be embarrassing. But all rules are in abeyance during the week, and there is a giddy round of dances, at homes, and garden parties, coupled with those other delights which Oxford in summer and Oxford alone can afford.

"The second year is, if anything, happier than the first, for there is the very valuable experience already gained, and the feeling that one is in a familiar place—also, though some may think this a calumny, the pleasure of looking down on the Freshers and perhaps guiding one or two of them in the paths of righteousness and good form. Soon, the terrors of schools arise before one's mind, essays are done with greater care, social amenities despised, and the virtuous undergraduate resolves not to see ladies, study fast, not sleep. But these do not concern me, for it was only of the joys of Oxford life that I promised to write."

*Indian Students in England: Sir Michael Sadler's Views.*—Lord Lytton's Committee, formed to investigate matters relating to the proceeding to England of Indian students, has been visiting various British Universities, and at Leeds it took the evidence of the Vice-Chancellor, Sir Michael Sadler, who is of course particularly fitted to judge as to how far this growing custom is desirable.

By his kindness *The Indian Social Reformer* has obtained the following summary of his evidence.—

"It is urgently desirable in the interest of world-culture that Indian students of promise (men and women) should be given all possible encouragement to obtain liberal education at a university and be accorded abundant facilities for medical, legal, pedagogic and technological training. India is rich in intellectual ability which does not as yet enjoy adequate opportunities of training and self-development. Alike by the methods of vernacular, and of western, education, the mental power of Indian youth should be husbanded, and be applied effectively to the tasks of citizenship, professional duty, learning, scientific research and self-government. A system of education combining the excellence of the eastern tradition of philosophical synthesis and of western methods of critical investigation, would in all probability be fruitful in new manifestations of thought and culture. The development of education from the primary school to the highest stage of university study seems to me to have very strong, if not the strongest, claims upon the public resources of India, and upon the generosity of private benefactors.

"Such a system of education should be consonant with the gradually changing conditions of Indian life. It should be aided liberally from public funds but be released as far as possible from governmental control. It should be diversified and elastic, so far as this is compatible with the maintenance in the several provinces of a substantial equality of standards throughout the successive stages of education.

"Further, in my judgment such a system of national education in India is likely to gain in vigour and in the power of self-criticism if it grows up in an atmosphere of freedom, in which Indians would feel direct and capital responsibility for the fortunes of their State—a State which, I hope, will remain within the framework of the British Commonwealth of Nations.

"Every living and healthily growing system of education has behind it a social ideal—implicit or explicit. It is the ideal which gives it power. In order to have a spirit of responsible freedom in its education, a people must be responsible and free. I believe that the *malaise* of suspicion prevalent among many Indian students is due to the fact that young India resents its subordinate status and wishes the Indian peoples, united by the bond of a common destiny, to be captains of their own fate. I am not sanguine that the suspicions now felt by many Indian students will abate until India is responsible for her own policy, for her defence and for her fiscal arrangements. I am deeply sensible of the great work which Britain has done in India for India, and profoundly appreciative of the spirit in which the vast majority of British administrators living in India have, while discharging their duties to their own Government, served India and the masses of her people. I cannot judge how soon the recent constitutional reforms will require amendment and extension. But my belief is that the irresistible trend of things is towards the political independence of India. I hope that this independence will be found compatible with close voluntary alliance with Britain. I conceive that the right policy for Britain as regards India is to aim avowedly at alliance, not at military or administrative control: at co-operation, not at subjection. The acceptance or rejection of this view cannot but influence, directly or indirectly, the temper and outlook of western education in India and the sentiments of Indian students studying in Britain, France and America.

"For more than three centuries the main currents of ideas in western education have run in the direction of individual responsibility and of national independence. These ideas are consonant with the spirit of freedom and autonomy, though they involve, as an inner corrective to exaggeration, the sentiments of social solidarity and of international

obligation. Western educational ideas have fostered in Indian minds the desire for freedom and autonomy. Where the facts of social experience in India clash with the aspiration towards autonomy and national self-dependence, education is at variance with life. In such circumstances, the influence of an education impregnated with the pre-suppositions of freedom, becomes irritant and perplexing. This infection of freedom, strong in western education in India, is far stronger in its effect upon the mind and outlook of the Indian who is studying in England, not least when he watches the operation of our arrangements for corporate life in universities and colleges.

“By slow, though accelerating, degrees western education has made untenable the principle of the military control of India by Britain. It has also made the practice of the civil control of India by British administrators increasingly unpalatable. But the introduction and diffusion of western education in India was inevitable. If it had been denied by Britain, it would have been sought by Indians elsewhere and through other agents.

“I believe, therefore, that the solution of the greatest psychological difficulties in the case of Indians studying in Britain will be found in the political reconstruction of the bonds which now unite Britain and India. Palliatives may be found in some administrative rearrangements, but no true remedy. Western education, through much of its literature and history and even in some of its economics, postulates national independence as the basis of national life and as one of the fundamental conditions of self-respect. Britain, even if it wished to do so, cannot suppress the system of western education in India nor isolate individual Indians from the influence with which western education is imbued. It is suggested that, with special reference to educational policy, the bold road towards the recognition of Indian independence is the safest one which the British Nation can follow in its relation with India. Under present conditions it seems more likely that this road will lead to voluntary and close alliance than to disruption. A frank acceptance of this aim would remove the antinomy which now prevails between the presuppositions of Western education and the political conditions to which Indians are now required to adjust themselves.

“I do not pretend to judge how far India is herself ready for independence or in what degree internal differences of racial temperament and outlook may delay organic unity in Indian nationality. Nor do I wish to imply that political democracy in its present Western form will necessarily be found congenial to India or compatible with her internal peace and with the development of her social welfare. But I would urge

that, in education and therefore in what our educational ideas presuppose, we should be prepared to give India, if she deliberately asks for it, what we consider best for ourselves; and that, as we in England are by no means convinced that we have yet found a form of political organisation or of government which meets adequately the many-sided needs of our national life, so we may reasonably allow India to make her own experiments with freedom and leave it to India to work out the adaptations of the idea of freedom which may best meet her temperamental and social needs.

"The reasons which at present induce Indian students to leave India for education or technical training are:—

(a) in a few cases, preparation for the I.C.S. examination, old arrangements,

(b) professional advantages of being called to the bar in Britain,

(c) superior advantages in the west (Britain, France, Germany, U.S.A.) in respect of university and technological training,

(d) prestige in India of western education qualifications,

(e) desire to see the west as it really is and to breathe the atmosphere of western society,

(f) an instinct that the west has something to teach which India now requires; which will ultimately enable India to win her freedom; and which should be blended in Indian minds with Indian thought in order to produce a new culture congenial to Indian needs and the Indian temperament.

"(a) The Indian universities, though they have rendered good service to India and are a wonderful achievement, are still inadequately equipped with opportunities for advanced study, with scientific laboratories, with libraries and with tutorial guidance. There is no Oxford in India. (b) Similarly, the modern English universities, though vigorous and improving, are still inadequately equipped with opportunities for advanced study with laboratories, with libraries, with halls of residence and with tutorial guidance.

"How far it would be just to say that the Government is responsible for the defects in India and England respectively depends on one's view of the part which Government should take in the organisation and provision of University and technological education. This issue has been bound up with many other considerations, *e.g.*, the anxiety of the Government of India not to add to the burden of taxation beyond what was necessary.

"The sending of Indian students to Britain for education has resulted in many cases in great intellectual and moral benefit; in others, in

comparative failure ; and, generally speaking, in the exacerbation of feelings of discontent with the present political status of India and with the ordinary social status of the Indian intelligenzia in European society in India. This effect has been inevitable, though unpleasant. In the end, the results may be salutary.

“ As a general rule, Indian students should defer their entrance to a British university until they have passed the Intermediate examination in Arts or Science in an Indian university. This status should excuse them from examination for matriculation in a British University.

“ When the modern English universities are more effectively and generously equipped with facilities for advanced study, and when the Indian universities find themselves in a position to provide better training for honours students in the last two years of their undergraduate course, it is hoped that the vast majority of Indians (like the vast majority of their contemporaries in other countries) will complete their university course in their own land, but that a large self-selected minority will proceed (where necessary with the help of liberal fellowships and travelling scholarships) to foreign universities for post-graduate study. Reciprocally, it is to be hoped that an increasing number of British graduates will proceed to Indian universities for graduate study, especially in subjects which can best be pursued in Indian surroundings. The great universities of India and of the west should all be, in the mediaeval sense of the term, *Studia Generalia*, i.e., places of study and investigation to which scholars flock from near and far.

“ Other suggestions which I desire to submit for the consideration of the Committee are made in the Report of the Calcutta University Commission, especially in (as regards Indian students in Britain)—

Volume III, Chapter xxix, pp. 41—59.

Volume V, Chapter L, pp. 61—66.”

# THE MYSORE UNIVERSITY MAGAZINE

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## EDITORIAL.

THE AIMS OF WESTERN EDUCATION IN INDIA.—Macaulay's famous Educational Minute of 1835 is, perhaps, unique in its confident ignorance as to the value of eastern culture. While Lord William Bentinck agreed with him, the Government were more moderate : they declined to withdraw encouragement from oriental studies, though determined to concentrate upon the fostering of western learning. Gradually the eastern learning has been coming into its own, and the very universities established primarily to promote western studies have come to realise that they have no more important function to perform than that of fostering the study of Indian literature and philosophy. They are just beginning to realise, also, that western studies in India will gain enormously in value by constant comparative reference to eastern modes of thought as expressed in the work of the eastern genius. Yet Macaulay's conclusion as to the necessity for shaping higher education on western lines was just : it had true premisses as well as unnecessary false ones. Compromise and interaction is the ultimate result. The method had to be the deliberate emphasising of the new and strange. Innumerable instances might be adduced from history in which the literature of a people and their thought and general culture have not merely profited but been revived by foreign influence. Macaulay gives as illustration " the great revival of letters among the western nations at the close of the fifteenth and the beginning of the sixteenth century," and refers particularly to the incalculable advantage to English literature of the Greek and Roman influence. He is wrong, of course, in doubting that Sanscrit



literature was equal to the literature "of our Saxon and Norman progenitors:" the immense superiority of the former can scarcely be disputed. But his general parallel is perfectly just.—"At the time almost everything that was worth reading was contained in the writings of the ancient Greeks and Romans. Had our ancestors acted as the Committee of Public Instruction has hitherto acted—had they neglected the language of Thucydides and Plato, and the language of Cicero and Tacitus—had they confined their attention to the old dialects of our own island, had they printed nothing and taught nothing at the Universities but chronicles in Anglo-Saxon and romances in Norman French—would England ever have been what she now is? What the Greek and Latin were to the contemporaries of Moore and Ascham, our tongue is to the people of India."

Inevitably, this English education could be given only to the few. Indeed, in adopting the "filtration process" the authorities for some time selected students almost entirely from the higher classes of the people. But their ultimate aim was far other, and this is the point that we wish to emphasise. In reading the old documents one comes to realise how very far were the governments even of those old days from what they have so often been charged with—seeking merely to provide competent clerks for their own service. Their aim was the ultimate education of *the whole people*,—not of course in the English language, but by the efforts of those whose own education had been in that language, who by its means had attained that western knowledge which in so many ways can brighten the lot of the humblest. Macaulay himself had this end in view. "We must at present do our best," he said, "to form a class who may be interpreters between us and the millions whom we govern. . . . To that class we may leave it to refine the vernacular dialects of the country, to enrich those dialects with terms of science borrowed from the western nomenclature, and to render them by degrees fit vehicles for conveying knowledge to the great mass of the population." In the words we have omitted Macaulay characteristically declares that the educated class must be "English in tastes, in opinions, in morals and in intellect," and of course there could be no more radical error than this. People thus denationalised would in themselves be valueless, and they could never exert the slightest influence for good upon their poorer countrymen. The fact remains that the English-educated Indian, remaining a genuine Indian throughout the process, is the great hope of the masses. From him alone can they learn, he alone can uplift them. The clearness with which this aim was conceived at the beginning may be illustrated by a passage from the first Annual

Report of the Committee of Education. "We conceive," they say, "the formation of a vernacular literature to be the ultimate object to which all our effort must be directed. At present, the extensive cultivation of some foreign language, which is always very improving to the mind, is rendered indispensable by the almost fatal absence of vernacular literature, and the consequent impossibility of obtaining a tolerable education from that source only. The study of English, to which many circumstances induce the natives to give the preference, and with it the knowledge of the learning of the west, is therefore daily spreading." The educated people "must be placed in possession of our knowledge before they can transfer it into their own language. We trust that the number of such translations will multiply every year. We shall be able to encourage any good books which may be brought out in the native languages by adopting them extensively in our seminaries."

The university trained citizen of this country is simply a trustee for his people. University education has absorbed, throughout, money that might have been spent on the direct alleviation of the lot of the poor, and on their direct enlightenment. Nay, much of it has been obtained by taxing them. Educational boons have deliberately been conferred on the few at the cost of the many. The end—the justifying end—is the benefit of the many. The Indian graduate is a trustee for his people,—nay he is their debtor, precisely as Saint Paul, glorying in what he considered the priceless, undeserved boon of his faith, proclaimed himself "a debtor both to the Greek and to the barbarian." His torch of learning is for the enlightening of others, his virtue withers if it does not go forth of him. It goes forth sometimes to make the froth of controversy, or into the vague shaping of ideals. There is practical, solid work, for the social and mental uplifting of the many, to be done; and of all times this is the least suited to dreaming.

**MATERIALISM IN EDUCATION.**—Early efforts toward education are spiritual, but sooner or later there enters the materialist motive. The universities of Europe were originally associations of people who came together to seek learning for its own sake and that they might spread its intrinsic benefits more widely. Later came the idea of degrees as credentials for various kinds of employment; and now the universities are bombarded by those who want "vocational education" even there, and think that the object of "higher education" is preparation for wage-earning. But perhaps no country has suffered so much as India from this perversion of the idea of education. No better description of

education has been given than "a preparation for leisure : " a preparation, that is, for the full intellectual and spiritual life which a vocation interrupts and which leisure constantly renews. But in India, more than anywhere else, education has come to be considered as a preparation for daily wage-earning, the inward life being left out of the calculation altogether. The examination is the goal, and the process itself is not thought of. This is not the point of view of those who planned the universities, but it is the usual point of view of the students, and, more emphatically, of their parents. It is not blameworthy, but is a matter of definite, pressing need. Under modern conditions, with greater complexity of needs, a higher standard of living is sought. It can be attained only by such employment as is to be got by means of western education. It was early found that, comparatively, eastern learning did not pay. Macaulay (in his "Minute") remarks,—“We are forced to pay our Arabic and Sanscrit students, while those who learn English are willing to pay us.” He tells this interesting story.—“A petition was presented last year to the Committee by several ex-students of the Sanscrit College. The petitioners stated that they had studied in the college ten or twelve years ; that they had made themselves acquainted with Hindu literature and science, that they had received certificates of proficiency. And what is the fruit of all this ? ‘Notwithstanding such testimonials,’ they say, ‘we have but little prospect of bettering our condition without the kind assistance of your honourable committee, the indifference with which we are generally looked upon by our countrymen leaving no hope of encouragement and assistance from them.’ They therefore beg that they may be recommended to the Governor-General for places under the Government—not places of high dignity and emolument, but such as may just enable them to exist. ‘We want means,’ they say, ‘for a decent living, and for our progressive improvement, which, however, we cannot obtain without the assistance of Government, by whom we have been educated and maintained from childhood.’ ” “These,” remarks Macaulay, “are surely the first petitioners who ever demanded compensation for having been educated gratis, for having been supported by the public during twelve years, and then sent forth into the world well furnished with literature and science.” Macaulay used this state of affairs as an argument for westernising education entirely. Certainly the westernised education has tended to fit men for the practice of a life-work, and it has therefore become the accepted passport to employment, even under Indian masters. Thus western education in India has always been sought and judged from this purely practical point of view.

*In itself, however, it is based upon an intellectual and spiritual tradition, and for this reason it is now being attacked everywhere. It is said incessantly that it is a university's business to teach a man a trade or profession, that "humane studies" waste his time; and clamour is so far yielded to that in new university schemes literary studies are given a smaller and smaller part. Reformers of another kind charge western education itself with materialism, and think that any kind of departure from it is for good. But the attack of the materialists—of those who would subordinate everything to vocational training—is the more dangerous, because it panders to the instinct of parents who care only that their sons may make money soon, and of students to whom also that is the sole aim; and because it is reinforced by economic distress, and even by industrial opportunity.*

We must preserve our courses in their cultural purity. A recent writer to the press lamented that our University devoted most of its attention to humanistic studies, and foolishly, because there were already plenty of candidates for government service and for admission to the Bar. We do not, as a matter of fact, pay more attention to humanistic than to scientific studies. But why should the writer think—why should so many writers think—that the former are a special training for the career of a government servant or a lawyer? They are simply a training for life, for the best kind of living. They ought to be the staple of every university's work. It is culture and power, not any sort of expert fitness, that are to be sought by the students of a university. A writer in *Indian Education* thus diagnoses the situation.—“The failure of Indian education lies in the fact that it has not and does not train for leisure; that it has not and does not produce a culture in the student community. The cause lies in the fact that its motive has been and is essentially materialistic; for western education has been and is regarded merely as a means of earning a living and not of living a life. But life is more than meat and the body more than the raiment, and until India can give an inspiration to her sons and daughters which shall call forth this higher concept of life and illumine the work of the class-room and study, no change in the medium of instruction, no provision for technical or vocational training, will satisfy the requirements, or the unexpressed longing that exists in the heart of the younger generation of her people, by virtue of their very humanity.”—This writer agrees with us that western education has not in itself this materialistic tendency. It is the way it is looked on that does the mischief. He suggests no remedy. What we can do, however, is to preserve the courses from utilitarian debasement; and also, in the daily working of

them, to see that all they can give to the student, for the good of his being, is duly given. He may be sent to college by his "people" to get a degree and earn, and he may himself seek these things first or only; but he is responsive enough, and for three years we have our chance with him. Wooden examinations and wooden lecturing in preparation for them have co-operated with false aims in ruining university education in India. The bettering of this is largely a matter of personal enthusiasm.

ALL-ROUND EDUCATION.—"Literary education" is subject to continuous assaults at present from those who fail to understand what education is meant for, and are content that a man remain really uneducated provided that his university fits him for technical employment. That a purely "literary" education is, however, an incomplete education is well insisted upon by a writer in *The Servant of India*. Not the training of memory, not even training in thought, is complete education; for education ought to include physical activity and the mental processes that direct this. In many places manual work has been introduced into educational curricula as "a means of eliciting mental powers which otherwise would remain undeveloped; to stimulate a capacity for initiative and responsibility, which purely intellectual training fails to impart." It cuts both ways. The manual labourer also should be taught thinking, as the thinker should be trained in manual processes. "As the world is constituted to-day, manual labour is an indispensable ingredient of it, and to relegate such labour to manual specialists is not only wrong because it arbitrarily limits the human scope of the toiling millions, but also because it makes the life of the non-toiler artificial and unnatural, and deprives it of a vital necessity, for which apparently there is no substitute. One may be sure that the modern division of mankind into people who do no manual work and people who do no mental work is not healthy. One man may be best fitted to spend most of his time at a lathe, another most of his at a desk; but to deprive either of *all* opportunity for the work the other man specialises in is to deprive them both of the fullness of life." Reference is then made to certain attempts to put this idea into practice. There is the curious programme apparently decided on at Antioch College, in America, by which students will alternate five weeks of school work with five weeks of work in factories. This is obviously a very faulty arrangement, if for no other reason than that there can be no continuity in either sphere of labour. Nor, as the

writer points out, does the scheme appear to include the necessary complement of the arrangement, in the provision for factory-workers of some mental training. More likely to be successful are the efforts made by certain Roman Catholic communities in America, but they of course have the great advantage that membership of the community implies both poverty and any service that may be required. Dr. Rathenan, the German socialist millionaire, who is now Minister of Economy, has produced a book, recently translated into English, in which he works out a system of alternating study and manual work.\* He suggests that all the young men of Germany should devote a year, not now to military training but to manual work. Such an idea is unlikely to be practicable in Germany or anywhere else. Yet the principle must be recognised, and must be applied in India. It may be doubted whether in any other country in the world the educated man, living by brain-work, is so indisposed to physical exertion, suffers so much by the lack of it. A certain amount of well-devised manual training at school would do wonders for body and mind,—wonders that are far from being accomplished by “manual training” as we know it now.

ENGLISH PROFESSORS OF ENGLISH.—In an article in the *Mysore Economic Journal*, “Lynx” thus unburdens his soul.—“The employment of Englishmen to teach English in India is the most unnatural phenomenon in education. It is impossible for the English professor to enter thoroughly into his pupil’s special difficulties, or to detect their source.” Such statements are sometimes made as a result of prejudice or malice, but here they are quite dispassionate, for the writer has been carefully working out the enormously difficult problem of the teaching of languages in India, and only seeks to improve things. Few, we hope, will agree with these particular conclusions. It is surely a recognised principle that both a language and a literature ought as a rule to be expounded by men native to the soil that produced them. Language and literature alike have a subtle correspondence with race. It is an extraordinarily difficult thing for anyone to move with utter freedom in paths of thought, emotion and speech which are not the paths of his own people; and when one endeavours to do this there is even a danger of losing that which is one’s own. It may be replied that the noblest literature transcends differences. Frequently it tends to do so. Always it has a certain value for all peoples—and much of this value they can

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\* Since the above was written the translation of Dr. Rathenan’s book has been received for review, and it will be reviewed in our next issue.

apprehend unaided. But great literature is never cosmopolitan in the sense of being non-national. A poet's individuality transcends race only at its own cost, for part of his special life is that of his people. Could we but get a Periclean Greek to expound Homer and Aeschylus to us how gladly we should secure him! All the labour of sympathetic scholarship would yield to his direct, unchallengeable knowledge; the temper of his speech—in his own language, concerning his own literature—would be enlightenment to us. The parallel is not complete, but it goes far enough. The mastery of the English language attained even by the average Indian student is a marvellous thing, and equally striking is the power of adaptation and responsiveness shown by Indians who have devoted themselves to the study of English literature. We know, too, that there are Indian professors of English whose interpretation of English literature is not inferior in value to that of Englishmen. But such examples are so rare that they will never be able to affect the rule, and it will always be necessary to have English professors of English. (Incidentally, it will always be necessary so to adapt conditions of service to changing circumstances as to secure, and to retain, the services of the best qualified Englishmen.) We believe, however, that an increasingly large share in this work will be given to Indians, and in their training for it one point should be remembered. Very few Indians study Greek and Latin. This is in itself a very great deprivation. However much school and university curricula have been modernised of late in England and elsewhere, the fact remains that the study of these languages and their literatures is one of the most salutary studies in the world. But our special point is that this study is by far the best avenue to the study of English literature. It is not, of course, the only avenue; but the relation between Greek and Roman literature and English is so direct and important, and the influence of the former upon the latter is so pervasive, so constantly instanced not merely in allusion but in vital matters of form and spirit, that ignorance of Greek and Latin is a tremendous handicap to any student of English literature. Many have applied themselves to the reduction of this handicap, after their college days; but Indian students should be given opportunities of getting at English literature from the side of Greek and Roman studies. The value of Sanscrit studies, of course, is to the Indian in general far greater than that of western classical studies; but not to those who seek mastery of English literature.

Disagreeing with the conclusions of "Lynx," we fully appreciate his main idea. It is not easy for the English professor to understand the Indian student's difficulties and the angle from which he views

## EDITORIAL

things. A not-infrequent result is that professor and class are at cross-purposes, the very aim of the professor's work being thus defeated. But would it be good to substitute imperfect knowledge duly expounded for fuller knowledge, simply because of such a danger? If the English professor applies himself sympathetically to his work, studies his students themselves, uses his great opportunities for studying the literature and the temper of the east, he does come to understand difficulties, does become able not only to express himself in ways intelligible here but also to illuminate both eastern and western matters by bringing them together in his pupils' sight. Nor indeed need such efforts be limited to the exposition of literature. He stands for another life, another civilisation; he promotes that contact, that mutual scrutiny, of east and west which we all desire. To serve such ends must be part of his daily endeavour. Otherwise it might well be admitted that he should not be here.

RELIGION AS PSEUDO-SCIENCE.—Mr. Shama Sastri reviews in this issue a curious work designed to prove that the *Vedas* are not merely replete with scientific lore but actually scientific treatises. Mr. Sastri has dealt with the idea faithfully, and with the just indignation of the man who hates to see the spiritual distorted into the material. Yet the author is to be honoured for his long pondering over sacred lore, and one hopes that he will be able to use the intimate knowledge thus acquired for a higher kind of exposition. This tendency to find in purely spiritual and poetic work a precise scientific significance has always been common. It is a way of bridging the gulf which so many imagine to exist between science and religion, while many a reverent student has found in such a study confirmation of the literal inspiration of ancient religious documents. Literal inspiration there may be, but of course it is not to be established in such ways. The *Old Testament* has continually been subjected to such treatment. One example in particular we remember. An enthusiastic divine expounded one of the most exquisite verses in the Bible, the verse in *Ecclesiastes* which runs thus,—“Or ever the silver cord be loosed, or the golden bowl be broken, or the pitcher be broken at the fountain, or the wheel broken at the cistern.” The silver cord, he announced, was the spinal cord, and the golden bowl was the skull. What the pitcher and the wheel were we fail to remember. But the conclusion was clear—there is nothing in modern anatomy which was not revealed, by inspired writers, to the ancient Hebrews!



## MATTHEW ARNOLD'S CRITICAL CATCHWORDS.\*

THE cult of the catchword is more widely spread to-day than ever before, but it has always been popular. The catchword is mob-logic, and provides therefore the method of the mob-orator—a method that may be used for the noblest or for the ignoblest ends. But indeed any audience, anywhere, is sufficiently a mob to be played upon by catchwords, and it is surprising how enlightened audiences will respond to them, find them logical and virtuous, yield without question to their spurious stimulus. They usurp the place of knowledge, wisdom, and ideal; they make thought unnecessary and give a colourable substitute for feeling.

But catchwords are not always false, though they always contain an element of falsehood; and sometimes they are most useful in guiding men aright. They stand towards reason as the drum-beat stands towards music; but the drum-beat is singularly convincing and singularly stirring. This is partly because of its simplicity and partly because of resolute repetition. Music, in its infinite subtlety, will fit all changes of thought and mood and circumstance, but the many may utterly miss its significance. There is not a man living who cannot understand the drum. Thus if you key your catchword drum to a good healthy pitch, and put into your thumping such variation of touch as is possible, you may do much good. The catchword may make clear and emphatic a thing that in general is true; and a little lack of adaptability will not matter very much.—Now, of course, it would be ridiculous to say that this is an account of Matthew Arnold's way in criticism. It is not our purpose on this occasion to speak of its virtue, but everyone recognises that though there have been profounder critics, more learned critics, critics wider in range, critics less fallible in judgment, there are in the whole history of criticism few if any who have done more to illuminate great literature and to systematise the estimate of it; and there certainly is none who has done so much to help the ordinary reader towards appreciation. This last fact is significant. This is what Matthew Arnold most wanted to do—to help

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\* Inaugural Address, Mysore University Union, 1921-22.

the average man to get the best out of great literature, and particularly out of great poetry. He had to get at the average man, and he had therefore to speak the average man's language. That is, he had to employ catchwords, catch-phrases. But indeed it was no effort for him to do so. His own mind, though so responsive and so candid, was inclined to love a groove. Further, he was instinctively a preacher, and reiteration is a large part of the rhetorical method. He was like Ruskin in always having a most vivid consciousness of the people he sought to influence; and like Ruskin he would say a thing again and again and again in the hope of clarifying things to the veriest dunderhead, and convincing the most recalcitrant. This was his method in all matters: it was encouraged no doubt by the fact that he was an inspector of schools. In the middle of his life, most unfortunately, he abandoned for a time his true work of literary criticism to take his stand as a teacher in the realms of religion, morality and politics; and there even more noticeably he worked by catchwords—"sweetness and light," "conduct three-fourths of life," and so on. There he was more confessedly the preacher than in his work bearing on literature; but in the latter also he set himself precisely to enlighten the "Philistine."

"Philistine" is indeed one of his favourites among catchwords. He conceived that this term was applicable—as regards daily life as well as literary appreciation—to the generality of Englishmen. Indeed, like so many who have travelled a little but not enough, he was given to "disabling" his own countrymen. He did so sometimes in literature, where the remote had a curious attraction for him. Quite unjustly he exalted ancient at the expense of modern literature; and with a similar injustice, so striking that it is hard to explain, he exalted contemporary continental literature at the expense of English. In his essay on *The Function of Criticism at the Present Time* he writes:—"Not very much of current English literature comes into this best that is known and thought in the world. Not very much, I fear: certainly less than of the current literature of France and Germany." "And this," comments Professor Saintsbury, "was in 1865, when the Germans had had no great poet but Heine for a generation, nor any great poets but Goethe and Heine for some five hundred years, no great prose-writer but Heine (unless you call Goethe one), and were not going to have any. It was 1865, when all the great French writers, themselves of but some thirty years' standing, were dying off, not to be succeeded! 1865, when for seventy years England had not lacked, and for nearly thirty years more was not to lack, poets and prose-writers of the first order by the dozen and almost by the score!" The same strange mood was shown

by Matthew Arnold in educational matters. He went abroad a little, and took a cursory view of certain universities and schools on the continent of Europe, whence he returned to disparage educational institutions in England by comparisons sublimely contemptuous of fact. This sort of thing, of course, is common enough, as when the Mysorean youth, betaking himself abroad, tarries for a year or so at Minnesota or Frankfurt, and returns thereafter as educational reformer. This is the vanity of youth; but Matthew Arnold was a sober, middle-aged man, well fitted to judge of educational matters. He was, however, a man in whom prejudice, once planted, took extraordinarily firm root. He had got (and were there time one might even show how he got it) the idea that the average Englishman was a "Philistine," and the idea coloured his whole view of English life and institutions. Even the essay on Milton, whom he idolised, begins with the suggestion that we are not nowadays so Miltonic as we ought to be, and a warning against the "Anglo-Saxon contagion."

To bring literature to the Philistine was considered by Matthew Arnold to be a sort of mission. But on the whole, he felt, the Philistine did not want literature. It was necessary to arrest his attention, to stimulate him somehow, and to keep him interested when he had begun to read. It was necessary also to make things exceedingly clear, otherwise he would not understand at all. If, however, the thick Philistine head could be made to comprehend even a single literary idea, that would be something gained; and further the thick head might be so gratified and surprised at its own apparently easy comprehension that pride would be enlisted also in the service of literature. Therefore Matthew Arnold coined certain broad ideas into catchwords, catch-phrases, catch-sentences, and endeavoured to make them current in Philistine thought; and some of these we shall consider. It may first be noted, however, that apart from the real catchwords almost every paragraph of Matthew Arnold proceeds on what may be called the catchword plan. It has often been remarked that the chief and most unfortunate of his many mannerisms is repetition. It delays those who want to get on, it irritates by its affectation, and, though in a comparatively rhythmless style it plays in some degree the part of rhythm, it is an intolerable nuisance to the more enlightened of his readers. But the repetition is for the Philistine, to give him every chance. The manner of it is to take a word or a phrase and circle a paragraph around it. Some prominent idea becomes the catchword of the moment, and it is repeated at every possible opportunity. Sometimes the momentary catchword is merely the link between two sentences:

Instead of using a conjunction Matthew Arnold repeats a word. The effect produced by this kind of thing may be illustrated by a very short passage, chosen at random. Writing of Wordsworth, he says—"We shall recognise him in his place, as we recognise Shakespeare and Milton; and not only we ourselves shall recognise him, but he will be recognised by Europe also. Meanwhile, those who recognise him already may do well, perhaps, to ask themselves whether there are not in the case of Wordsworth certain special obstacles which hinder or delay his due recognition by others, and whether these obstacles are not in some measure removable."

We have referred to the catch-sentence that "conduct is three-fourths of life." Matthew Arnold never allows us to forget this idea. The reforming zeal that produced his somewhat unfortunate writings on social and religious matters entered also into his criticism, in that he stressed the ethical function of poetry nobly, and with most healthy results, but with a somewhat too exclusive emphasis. This appears in the sentence that furnishes our first literary catchword—"All depends on the *subject*." It was, of course, Matthew Arnold's habit to exaggerate an idea that he wished to make clear and emphatic, and this is deliberate exaggeration. It is modified indeed in his own critical practice, where often enough he has occasion to show that subject is by no means everything. In the essay on Milton he goes so far as to say that the soul of the power of the noblest poetry "resides chiefly in the refining and elevation wrought in us by the high and rare excellence of the great style." Yet the categorical statement as to subject stands. He meant more by it than he should have meant. It represents error, bias, in his mind. He did not sufficiently value, just as Carlyle did not sufficiently value, those elements in poetry that are not "matter," the beauty and the power that are created when poetic genius of the highest order exerts itself, in thought and passion and supreme felicity of utterance, upon themes that in themselves fall short of the highest.

"Poetry is criticism of life"—this catch-phrase of Matthew Arnold has become the most popular of all definitions of poetry. It is constantly forgotten that the definition (so to call it), as given by Matthew Arnold, was not quite so bald as that. Poetry, he said, is "a criticism of life under the conditions fixed for such a criticism by the laws of poetic truth and poetic beauty." But while it is not fair to leave out those additional words, they make hardly any difference. Indeed they beg the question. This question is—"What is poetry, and what does it do?" Whatever it is and does it will always remain subject to its own laws of truth and beauty: that qualification really leaves the main

statement unqualified. Poetry, then, is criticism, its function is to criticise, to pass judgment upon, life. This account of poetry errs both in assertion and in omission. There is indeed much great poetry which provides definite and even purposeful criticism of life. Much of Wordsworth's poetry is an example, and Matthew Arnold therefore holds Wordsworth in particular esteem. But this element in poetry is not poetical: it is only so impregnated with poetic power as to seem itself of the essence of poetry. On the other hand Homer, whom Matthew Arnold himself would certainly exalt far above Wordsworth as a poet, most strikingly fails to offer such judgment. Homer gives a profoundly true, and a profoundly moving, presentation of life, but in no conceivable sense can he be said to offer criticism of life. He stands far aloof, as little inclined to judgment as to sentiment. Milton's case is more interesting. He set out to render, in *Paradise Lost*, just such a criticism of life as Matthew Arnold's definition contemplates. To vindicate God's ways to men, to make clear the mystery of human destiny, to effect judgment of life from the Puritanic standpoint—all this he sought to do. But can we therefore accept Matthew Arnold's phrase as an account of the poetic being of Milton's work,—even of *Paradise Lost*? Very far from it. His general theme, with its precise and narrow doctrine, is a constant handicap to his poetry. As a man, he was too big for it; as poet he constantly transcends it. The doctrine required rigid moral division—the exaltation of God and His angels, the debasing of those who opposed them. It implied also the centring of interest upon the human victim, weak yet lifted into hope by mercy. This is the "criticism" intended, but it is not given. The fallen adversary is made far to transcend the Deity both in reality and in grandeur, and even the most moving moral virtue of the poem belongs to him; while pity and sympathy desert our little, untried Eve and Adam for him who is majestic even in ruin, whose suffering, like his struggle, are far beyond their ken, whose tears of pity and of sorrow are "tears such as angels weep." Far away from theologic dogma, from moral saw, from the effort of the expounder or the exhorter is the poet's world. Where Milton seeks to convey his theological and moral message he has the hardest work to remain a poet, and his noblest passages ignore or contradict that message.\*

There are great poets whose criticism of life, so far as they provide such a thing, is notably false in certain particulars. Of such is Shelley, to whom, consequently, Matthew Arnold is extraordinarily unjust. To him Shelley, because of ethical error as well as a certain intellectual insufficiency, is merely "a beautiful and ineffectual angel, beating in the

'void his luminous wings in vain," or again—"that beautiful spirit building his many-coloured haze of words and images

'Pinnacled dim in the intense inane.'"

Mr. Herbert Paul remarks of the "ineffectual angel" idea,—“I suppose it means something. But it does not account for the ‘Skylark,’ or ‘When the lamp is shattered,’ or the mighty ‘Ode to the West Wind.’” It does not indeed, simply because the judgment is not made from the poetic point of view.

Such “criticism of life” as Matthew Arnold seeks in poetry—its presence or absence, its truth or falsity—is indeed irrelevant poetically. Poetry’s real function in relation to life is its *representation* with the truth and vividness of profound and passionate understanding. Judgment may be offered, but it is not essential, or of the nature of poetry. The weakness of Matthew Arnold’s contention may be illustrated from the passage on Burns in the essay on *The Study of Poetry*. He was peculiarly unfitted to understand Burns, whom he called (though not in deliberate criticism but in a personal letter) “a beast with splendid gleams.” In fact, anyone who believes in his heart that poetry is a criticism of life will be sadly troubled by Burns, and, if logical, will certainly have to declare that Sappho and Catullus are not poets at all. Matthew Arnold quotes certain moralising passages from Burns, which contain excellent criticism of life, but points out that we find the real Burns not in these but in very different passages, where no criticism of life is to be found except a kind of ironic criticism which, as criticism, is valueless. Now Matthew Arnold is certainly wrong in thinking that in the moralising and religious passages we do not find the real Burns. These passages are perfectly genuine; they represent one side of the man, whose great trouble, as Carlyle pointed out, was that he could never reconcile the contending elements within him. It is true, however, that in such passages we do not find Burns the poet, and where we do find Burns the poet we find no criticism of life, or criticism that is not true. Bad criticism of life, splendid poetry; the more a poet Burns shows himself, the less, and the less truly, does he criticise life. How then can poetry be defined as something which may vary inversely with its power?

Another of Matthew Arnold’s persistent phrases is “high seriousness.” This quality he considers essential to the best poetry. Here again he seems to err, and the error is brought about by the same ethical bias. We may ask whether either Homer or Shakespeare, for example, would have liked to have the spirit of their work thus described. They would, one thinks, have been inclined to smile at it—particularly Shakes-

peare. Milton.—the later Milton—would not have resented it. There is not a line, not a word, in *Paradise Lost*, in *Paradise Regained*, in *Samson Agonistes*, that is not inspired by something that we may term "high seriousness," and perhaps the same is true of Dante's *Divine Comedy*. But Milton wrote also *L'Allegro*, which is just as truly poetry, though poetry of another kind; and there is many a sonnet of Dante inspired by a very different mood from that of the *Divine Comedy*. But it is when we think of Homer and of Shakespeare that we feel how narrow, how cramping, is the term. Such poetry as theirs is not limited by any mood or temper: like life, it embraces all. There is no point of view from which Shakespeare does not see and picture things,—save that the good and the evil may never be confounded. One mood or tone is human as another: frivolity may for the moment be wisdom, and high seriousness "mere folly." We could not tolerate a friend who was all high seriousness, and a poet must answer to our whole being more closely than a friend. The critic's scope is here not wide enough for his theme. Perhaps the very best sort of comment upon this high seriousness requirement is that which Professor Saintsbury permits himself upon Matthew Arnold's denial to Chaucer of this quality. "One feels disposed to enter and argue out a whole series of not quite contradictory pleas such as 'He has high seriousness' (*vide* the 'Temple of Mars,' the beginning of the 'Parliament of Fowls,' and many other places); 'Why should he have high seriousness?' (a most effective demurrer); and 'What is high seriousness, except a fond thing vainly invented for the nonce?'" It will not do. And indeed it fails, even from the ethical point of view. For, quite apart from our pleasure, there is many a gentle and far from high-flown passage that does one as much good, and teaches one as much, because of its beauty and its truth, as the lofty passage of sustained seriousness.

Somewhat closely related to this phrase is the next one—"the grand style." This also Matthew Arnold considers essential to the highest poetry, and of course "high seriousness" and whatever "the grand style" may be will tend to go together. But let us examine the phrase. At first sight it seems simple enough, and it seems to suggest at once a definite meaning. "The grand style," we say; and we think of Milton, of Homer, of Shakespeare, and indeed of many others. But the very poets we have thought of as possessing this "grand style" give us pause; and difficulties arise which finally invalidate the phrase. To start with Milton,—whatever the phrase means it must undoubtedly apply to *Paradise Lost*, and not only to that poem as a whole but to every smallest part of it. But what is the exact meaning

of the phrase, as applied to *Paradise Lost*? Obviously it indicates such sustained elevation of tone as befits the dignity of theme and purpose. But does it not also bear reference to Milton's continuous elaboration of diction and of rhythm? This is an essential part of the "grandeur" of Milton's style. Again, if there is any poet to whom Matthew Arnold would ascribe the continuous and unfailing use of the "grand style," it is Homer. The essence of the grandeur, then, must be common to Milton and Homer. But in what do they agree? In Homer there is nothing of the statuesque dignity appropriate to Milton's solemn religious theme. In place of Milton's slow stateliness there is turbulent speed. Milton's grandeur is that of a majestic yet richly adorned edifice. Homer's is that of a mighty river. Milton's work is that of a craftsman, skilful, highly trained, and patiently laborious. He works upon a carefully studied plan. His word-materials are chosen and gathered with infinite care from sources far apart in space and time, and he fashions them into his work with a slow care to which the syllable and the verse-paragraph are of equal importance. To the qualities resulting from such processes there is nothing at all corresponding in the spontaneous, intrepid verses of the *Iliad*. Both styles, then, are "grand," this we feel and know, but they so differ in "grandeur" as to leave but a very vague correspondence to be indicated by the term—so vague that the term is valueless. In Shakespeare, Matthew Arnold finds "the grand style" intermittent. But if one considers passages where its presence is undoubted—the soliloquies of Hamlet, for example—one is driven to ask, again,—“Where, after all, lies the comparison between this and Milton's style on the one hand, Homer's on the other?” Suffice it to suggest that Shakespeare's "grandeur" is differentiated by an element foreign equally to Milton and to Homer—the special and unique quality that emerges when speech is quickened and ennobled by profound and passionate knowledge of the human soul. Resemblances are swallowed up in difference, and one feels that the phrase, "the grand style," is really of little significance as indicating a characteristic of high poetry. Further, can we admit that poetry which pretends no sort of "grandeur"—certain kinds of lyric, for example—is inferior as poetry on that account?

Two other catch-phrases may be referred to—"the historic estimate" and "the personal estimate." Matthew Arnold condemns both, and unfairly, though of course a warning against their unwise use is always necessary. In the phrase "the historic estimate" he refers to the historical method of criticism—the method which, in judging a man's work, takes it in relation to the conditions and movements of his



time, to previous, contemporary and subsequent performances in the same sphere, and to the known facts of his own life. Matthew Arnold definitely sets himself against this method, and it is worth while to examine his arguments. He thinks, first, that this method may lead us, in the very realisation of the difficulties overcome by a poet, and the originality of his achievement, to over-value his poetry in itself. Second, he fears that attention to the historic setting may distract the reader from the due enjoyment and judgment of the work itself. To both these arguments it may be replied that the possibility of abusing a method ought not to count against it if in itself it is useful, and the usefulness of the historic method needs no expounding nowadays: frequently it would be impossible, without some application of this method, to understand fully the significance of a work in itself. Then, as to the first argument, the suggested over-valuation is unlikely to take place, since in the mind of any serious student of literature there are always comparisons enough to keep matters right. It is not just to suppose that the user of the historic method will inevitably be dominated by it. As for the threatened distraction—that is not a special result of any method of criticism. There always will be people who care more for externals than for the inward reality of a poet's work. Many a critic, absorbed, for example, in considerations of form, of rhythm, of style, fails to apprehend the meaning and the power of a poem; and such persons, applying the historic method, will always be inclined to lose the reality in a maze of detail as to circumstances, influences, and so on. But the true critic knows his business better than this, and will not allow anything to distract him from the "real estimate." This will always be supreme in his mind; and other methods will but help to make it surer and clearer. There is another point, apart from the consideration of poetry as poetry. Carlyle remarks,—“Poetry, were it the rudest, so it be sincere, is the attempt which man makes to render his existence harmonious, the utmost he can do for that end; it springs, therefore, from his whole feelings, opinions, activity, and takes its character from these. . . . Thus the history of a nation's poetry is the essence of its history, political, economic, scientific, religious.” It is only by the use of the historic method that we can study poetry as the supreme record of a people's history.

Similarly, Matthew Arnold warns his readers against the “personal estimate” in literature. “A poem” he says, “may count to us on grounds personal to ourselves. Our personal affinities, likings, and circumstances, have great power to sway our estimate of this or that poet's work.” Now, his own critical principles, and his estimates of

individual poets, have in them a great deal of the personal view. Do we consider this, on the whole, unfortunate? As a matter of fact, the objection to the personal estimate is only less weak than that to the historic estimate. A critic ought, of course, to endeavour to become conscious of, and eliminate, his prejudices, and to consider values as they exist for the generality of men. But totally to eliminate the personal in criticism would be to make criticism purely intellectual, and this would never do, either for poetry or for the best prose. Prejudice may be responsible for many errors on the part of Matthew Arnold, but the personal sympathy that comes from a certain kinship is responsible for a depth and truth of insight that matters much more. All critics have their limitations, and critics vary as poets vary. Not every critic—not even every great critic—will serve for the judging and interpreting of every poet. Wordsworth lived near Matthew Arnold's own time and on Matthew Arnold's own showing danger lurks in the nearness: it tends to produce the personal estimate. This danger is increased by the profound and special sympathy between Wordsworth's and Matthew Arnold's views—both of life and of poetry. The result, in the essay on Wordsworth, is the assigning to him of a rank in poetry as to which few critics, perhaps, would agree. This is the defect of so "personal" an estimate. But surely it is much more than compensated for by the insight and illumination of the essay. It is because of personal kinship that Matthew Arnold understands Wordsworth so well.

The great example of the "personal estimate" on the part of Matthew Arnold himself is the essay on Gray. Curiously enough, the despised historical method also is here employed to defend the poet: historic circumstance is cited to account for the smallness of his production. But in this essay the personal estimate is of peculiar importance. Gray and Matthew Arnold were very closely akin. Matthew Arnold did not share Gray's melancholy or his love of solitude, and his habit was as strenuous as Gray's was indolent; nor did he possess Gray's wide and precise scholarship. But the resemblances between them are very striking and go very deep; and the sympathy of kinship induced Matthew Arnold to overestimate strikingly Gray's capacity as a poet. To both of them uprightness and refinement of conduct were the most important things in life. Both had a most delicate and sensitive appreciation of literature, and both based their literary judgments upon the practice, closely studied, of ancient classical literature. In both there is the same refined and scrupulous care in composition, whether in verse or in prose, and in prose a certain lightness, even playfulness, of touch. In poetry neither was spontaneous; and while Gray was far the greater

and more elaborate craftsman, yet the words (quoted at the end of Matthew Arnold's essay on Gray) in which Gray noted the aims of his poetic style—"extreme conciseness of expression, yet pure, perspicuous, and musical"—indicate just what Matthew Arnold also sought in his verse. In both, brooding meditation took the place of passion and inspiration; they lacked the abundant life that makes great poetry. Yet their feeling was true and deep, and they displayed extraordinary *felicity*, though not extraordinary *power*, in its expression. Gray wrote before the rise of the great "romantics," Matthew Arnold when they had completed their work. Gray prepared for them, and Matthew Arnold judged them. But Gray's half-hearted yet notable ventures in the direction of romanticism, ventures ever controlled—to some extent, indeed, stultified—by the continued influence upon him of the other tradition, correspond curiously to Matthew Arnold's keen, but by no means full, sympathy with romanticism. And finally, both were thwarted by environment. When Matthew Arnold remarked that when Gray was writing "a sort of spiritual east wind was blowing," preventing Gray's genius from "flowering," he had in his mind, no doubt, a much too exalted idea of Gray's power of poetic creation; yet undoubtedly that eighteenth century atmosphere must have gone far to chill what ardour Gray possessed. And similarly, Arnold himself, in his quite different day, was chilled by a much more deadly current—the east wind of religious scepticism. Both were sensitive natures, quick to feel such influences. Thus the idea of a poet who cannot "speak out" in poetry because something in his age stifles him came to Matthew Arnold out of his own experience; and Gray's case seemed to him to be parallel to his own. His own consciousness of checked impulse led him to imagine—wrongly—that Gray too would have been a much greater poet in a more favourable time. Thus Matthew Arnold's estimate of Gray was very largely personal, for which reason he over-valued him; but is there anyone who would wish that personal element absent from the essay on Gray?

Even Matthew Arnold's catchwords reveal his greatness as a critic. They insist on the application to literature of the ethical test, and if there is anything we need incessantly, as corrective, it is emphasis, over-emphasis, upon that point of view. Of the two extremes in the estimating of literature, the ethical extreme is full of health, the "art-for-art's-sake" extreme is full of corruption. And Matthew Arnold sought to guide the many, for whom a precise, middle view is hard to find and keep. Further, while we have throughout been disputing the full validity of these catchwords, we cannot but notice how central, so to speak,

is their point of view. They raise the most essential problems of appreciation and criticism. Every one of them, however fallible in application, forces some real issue upon us. However far we pursue literary study, we can never abandon the lines of thought so clearly indicated in Matthew Arnold's catchwords.

J. C. ROLLO.

## SOUTH INDIA AND HER MUHAMMADAN INVADERS.\*

PROFESSOR Krishnaswami Aiyangar has established for himself a place in the front rank of South Indian historians and needs no introduction to the readers of this magazine. By his timely publication, in book form, of the several essays which were read before the Mythic Society and as Extension Lectures under the auspices of the Mysore University, he has laid the students of history under a great obligation. The book before us graphically describes South India, as it was, amidst the convulsing invasions of the Muhammadans and the interine struggles or 'the struggle for empire' amongst the rival kingdoms in South India itself. It bears evidences of the close study and research which we have been accustomed to associate with its author.

The purpose of the book is soon told. In these six essays forming the third course of Special Lectures in the Department of Indian History and Archæology of the University of Madras, we have

(1) the disruption of the Chola Empire due to (a) the pressure of the Pandyas from the South, (b) the natural tendency to independence of the feudatories within, and (c) a fratricidal strife in the Chola ruling family itself ;

(2) the revival of the Pandyan power ;

(3) the invasions of Alau-d-din and Malik Kafur extending as far south as Madura and Rameswaram ;

(4) Mahamad Taghlakh's invasion of South India ; and

(5) a history of the Sultanate of Madura together with (a) a special note on the date of the Ceylon Invasions, (b) the identification of several places of importance in the history of South India, (c) a note on the chronology of Mahamad Taghlak's reign, (d) geographical notes and (e) extracts from The Batuta's travels in South India and Ceylon.

It goes without saying that 'the character of the invasions' by Malik Kafur and Alau-d-din had the spirit of plunder in them but not of conquest or occupation of territory, probably because it was realised

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\* South India and her Muhammadan Invaders. By S. Krishnaswami Aiyangar, B.A. Oxford University Press.



**HIS HIGHNESS  
THE MAHARAJA OF MYSORE, G.C.S.I.**



that 'a usurpation is never a stable cure for keeping the disorderly elements in an empire permanently in hand.' Mahamad Taghlak or Ulph Khan ruled over the largest empire of any Muhammadan ruler, for 'with his accession, the spread of Muhammadan power in the Dekhan' grew and after his invasions of Warangal and Dorasamudra about 1327-8, 'his empire attained the greatest extent Muhammadan Empire ever did in India extending as it did from Sonargam to Gujerat, and from Lahore to M-a'bar.' This 'man of ideas' was a great scholar and letter writer but a 'typical eastern potentate, complete as to arrogance, cruelty, power and pride, who for seven and twenty years was to cry, "Off with his head!" to any one he pleased.' The Emperor who never hesitated to 'spill the blood of God's creatures' also 'established hospitals and almshouses for widows and orphans on the most liberal scale.' He was the 'most eloquent and accomplished prince of his time, . . . not less famous for his gallantry in the field than for those accomplishments which render a man the ornament of private society.'<sup>1</sup> The nature of Mussalman rule and their policy of Empire are described, by Professor Ratnaswamy of Madras, as mainly nomadic. He says,<sup>2</sup> "Nomads were the Muhammadan conquerors of India and nomadic was their rule. The impress of nomadism was felt in their Government, their social life, their attitude to the country they invaded, and their relations with the people they brought under their subjection. It coloured their public and private life, prompted some of their most characteristic actions and policies, and determined the course of their career in the country . . . It is the key to their history, because it was the spirit of their civilisation.'

The map forming the frontispiece to the book reminds us of the great and destructive march of Malik Kafur to South India in A.D. 1310, when he 'swept through the kingdom, destroyed the capital, laid waste the country, and carried off the reigning raja,' while he set his mark so far south as Rameswaram. Five of the illustrations refer to five of the Hoysala capitals, one of which on page 167, refers to the royal residence at Belur, a capital of these Kannada Kings. This is also plate IV of Rao Bahadur R. Narasimhachar's excellent monograph on the Keshava Temple at Belur. A beautiful illustration, on page 48, of the sculptural representation of the Tulabhara ceremony deserves more than a passing notice.

In this volume which 'embodies a considerable volume of information,' we have so much for which we have reason to be grateful to the

<sup>1</sup> F. A. Steel.

<sup>2</sup> *Journal of the Mythic Society*, Vol. IX, p. 191.



Professor. 'We have no business to seek more from the past than the very past itself'—(*Lord Morley*). The Hoysala Empire is continued in the Empire of Vijayanagar and the State of Mysore and His gracious Highness is the occupant of the throne of Vira-Ballala III. Professor Krishnaswami Aiyangar, therefore, appropriately inscribes the book to His Highness out of loyal devotion and duty and it shall be our endeavour to show that herein he has sought no more from the past than the very past itself.

In his fifth Annual Address to the members of the Mythic Society, H. H. the Yuvaraja of Mysore presiding, the Rev. Father Tabard after a rapid survey of the first indigenous dynasty of the Kadambas of Banavasi, the Gangas of Talakad, the essentially Mysorean dynasty of the Hoysalas which could take its place among the most glorious dynasties of mediæval India, the Vijayanagar Kings and the Mysore Rajas, tells us—'With chapters in bold relief on the Hoysala Princes, the Vijayanagar Viceroys, the Poligars, the Muhammadan Sultans and the Mysore Wodeyars, names like those of Vishnuvardhana, Kempegowda, Jagadevaraya, Chikkadevaraja, would emerge from obscurity and take the place which is due to them among the heroes famous in Indian History.'<sup>1</sup> One such name is that of the patriotic Hoysala Vira-Ballala III and if any one doubts, the pages of the volume under review are a sufficient answer.

Another interesting question suggests itself to us regarding the nature of the connections between the various ruling families of Mysore from olden times. The relationships that existed between the Hoysalas and the Gangas need not be recapitulated in these pages; reference may be made to the very suggestive ideas contained in Professor Krishnaswami Aiyangar's book.

Vira-Ballala III, in A.D. 1339, 'was ruling in happiness at Sri Vira Vijaya Virupakshapura as his residential capital (Nelevidu).' He was the sole monarch by his own valour.<sup>2</sup> An inscription at Hampi refers to the Hoysalas, implying thereby that Hampi was in the Hoysala Kingdom at one time.<sup>3</sup> In A.D. 1328 Machya Dannayaka was in Penukonda as a Hoysala Viceroy. The coronation of the son of Ballala III, known as Vira Virupaksha or Vira Vijaya Virupaksha took place at Hosapattana.<sup>4</sup> This Ballala or Ballala IV was also familiarly known as Hampewadiyar or Hampiah. In A.D. 1352, 'Vira-Bukkarayalu was

<sup>1</sup> *Journal of the Mythic Society*, Vol. VI, pp. 7-8.

<sup>2</sup> *Ep. Car.* Vol. IX *Hoskote*, 43.

<sup>3</sup> *Journal of the Mythic Society*, Vol. XI, p. 21.

<sup>4</sup> *Cm.* 105 and *Bn.* 111 (*Ep. Car.* Vol. IX).

ruling at Dorasamudra and Penukonda.<sup>1</sup> In A.D. 1354, Bukka was ruling from Hosapattana, and in A.D. 1355, he was in Vidyanagara.<sup>2</sup> Bukka who is called the 'Elevator of the Hoysala Empire' was Hindu Raja Suratrana (Sultan over Hindu Kings); in 1355 A.D. he was ruling from Hosapattana in the Hoysala country,<sup>3</sup> the Hosapattana being, not Hosdurga, etc., as conjectured at one time by Mr. Rice but probably Hampe. Rao Sahib Krishna Sastri suggested whether it may not be Hospet but he stated that the place had yet to be identified.<sup>4</sup> Three Hindu chieftains Harib, Kapraz and Kampraz are mentioned in the campaigns of Allau-d-din about 1352 A.D. and they are identified with the three brothers Hariappa, Bukkapparazu and Kamparazu. A certain Vallappa Dandanayaka who figures in the inscriptions of Ballala III is identified with Aliya (son-in-law) Vallappa, a feudatory of Harihara II.<sup>5</sup> Ferishta says that Ballala called the city after his son's name Buja.<sup>6</sup> It was only in A.D. 1375-6 that Harihara II styled himself 'Emperor of the South,' the title which Somesvara had assumed, as Sarvabhouma about A.D. 1255. It is from these circumstances that Professor Krishnaswami Aiyangar says that 'the foundations of Vijayanagar were laid in the fortification of Virupaksha Pattana and the installation of the Hoysala Prince there in the position of heir apparent respectively in A.D. 1339 and 1340.' Then, the influential officers of the Hoysala Empire 'gave visible embodiment' to the success of their patriotic efforts by 'elevating to the dignity of "capital of Empire" a new foundation of the last great Hoysala, Vira Ballala III.'

Vijitya Visvam Vijayabhidhanam

Visvottaram Yo nagarim vijadatta.

The five brothers who were responsible for the foundation of the Vijayanagar dynasty were at first Viceroys of the Hoysala Kings, Harihara being the foremost of them. A certain Ballappa Dannayaka is variously mentioned as a son of the Hoysala Ballala III and as a son-in-law of Harihara I. It has also been mentioned that Ballala IV was known as Hampiah or Hampewadiyar. Considering the close alliances of the Hoysalas with prominent Cholas and Gangas in earlier days and considering also that the most prominent and the most useful as well as the virtually independent chieftains under the fast crumbling

<sup>1</sup> *Ep. Rep.* for 1908.

<sup>2</sup> P. 22 of the book under review.

<sup>3</sup> *Cd.* 2.

<sup>4</sup> *Journal of the Mythic Society*, Vol. II, p. 128.

<sup>5</sup> *Ibid* p. 129.

<sup>6</sup> Note to p. 171 of book under review.

Hoysalas were the rising sons of Sangama, it does not appear in the least unlikely that as a political measure marital connections were formed with them by the Hoysala rulers.

The Vijayanagar episode with its fluctuating successes against the Bahamini Kingdoms is fully and graphically described by Prof. K. Aiyangar and this as well as his detailed account of the Sultanate of Madura, the Pandyan Kingdoms and the Ceylon Invasions is well worth study by students of South Indian History.

If the Vijayanagar Empire was a succession and a successful continuation of the famous Hoysala Empire, these Hindu Empires are continued to this day by the Mysore Rajas but for the short interregnum when Haider Ali and Tippu Sultan occupied the Mysore throne and made their contribution of valour and genius to History. We have the genealogy of the Mysore Rajas and their origin on pages 124-5 of Mr. Rice's book 'Mysore and Coorg from the Inscriptions.' 'They are of lunar race . . . Certain Yadava princes from Dvaraka, (the capital of the hero Krishna in Kathiawar) came to the Karnata country, either led by fancy . . . or in order to visit their family God Narayana on the peak of Yadugiri (Melkote). Seeing the beauty of the land and being pleased with it, they took up their abode in Mahishapura (Mysore), and became the progenitors of the existing royal family. Tradition alleges that there were two princes Vijaya and Krishna. Espousing the cause of a distressed maiden, the daughter of the Wodeyar or chief of Hadana (Hadinad), they saved her from a forced marriage with the Chief of Karugahalli, who was of inferior caste, by secreting themselves at the wedding banquet and slaying him. She then became the willing bride of Vijaya, who assumed the government of Hadana and Karugahalli, adopting the title of Odeyar or Wodeyar, along with a profession of the Jangama or Lingayet creed. From them was descended Hire-Bettada-Chamaraja' (1513-52). His eldest son Timmaraja defeated a general of Ramaraja and withheld tribute and about 1610, Raja Wodiyar took possession of Seringapatam and made the island town his capital.

Yaduraya is equated with Vijaya and given dates 1399-1423 A.D. and several names are inserted between the progenitor and Hire-Bettada-Chamaraja (1513-52 A.D.). An interval of a century would thus have to be accounted for, before we alight on authentic history.

Rao Bahadur R. Narasimbachar has given us an account of two records of Krishnaraja-Wadiyar III (1799-1868).<sup>1</sup> These records may be seen in original at the Jagan Mohan Palace, Mysore and a

<sup>1</sup> P. 62 of the Annual Report of the Mysore Archaeological Department for 1918.

photo of one of these is plate X of this report.<sup>1</sup> One of these, a brass plate called Santanambuja (progeny lotus), contains a genealogy of the Mysore Rajas. A list of 22 kings is given, commencing from Yaduraya in the bottom of the crescent-like portion of this lotus-flower and the first six of the list may be mentioned.

	Names	Birth		Coronation		Reign		
		Saka	A.D.	Saka	A.D.	Y	M	D
1	2	3	4	5	6	7	8	9
1	Yaduraya ..	1293	1371	1322	1400	24	2	5
2	Hire-Bettada-Chamaraja	1331	1409	1346	1424	35	5	8
3	Timmapparaja ..	1356	1424	1381	1451	19	2	28
4	Hire-Chamaraja ..	1386	1464	1401	1479	34	11	4
5	Hire-Bettada-Chamaraja	1415	1493	1436	1514	39	9	22
6	Immadi-Timmapparaja ..	1434	1512	1475	1553	18	10	4

We are further told that Yaduraya came from Dwaraki Vijapura, punished the wicked, acquired some minor principalities and created the Mysore State. Hire-Bettada-Chamaraja (5) also added to its territories but it was Raja Wodiyar, ninth in the line, that acquired the throne of Dharmaraja and was crowned in Seringapatam in S. 1533 or 1610 A.D. Less satisfactory, however, is the Puranic genealogy,<sup>2</sup> which, after tracing Yadu from the Moon, proceeds to state that in this line arose a king called Sama who had three sons Timmaraja, Krishnaraja, and Bettada-Chamaraja, the last of whom had a son Rajanripa who defeated Tirumalaraya and occupied the jewelled throne at Seringapatam. This Puranic account seems to suggest that King Sama may have been the first historical personage in the Mysore genealogy, viz., Hire-Bettada-Chamaraja (1513-52 A.D.).

In connection with the jewelled throne, a short reference to the Mysore throne will not be out of place. An inscription of A.D. 1623 describes Chamaraja Wadiyar VII as 'the lord of the celebrated throne of Bhoja in Seringapatam.' Was this the jewelled throne of Sri Ranganaya? Another record of A.D. 1680 credits Raja Wadiyar with having defeated Tirumalaraya, the Vijayanagar Viceroy, whereupon his coronation on the said throne took place in S. 1533. In any event, the general impression that the Mysore throne was a gift of Aurangazeb in A.D. 1699 is not true, and the throne came into use from 1610 A.D. at the latest, when the Viceroy of Vijayanagar, Sri Rangaraya or Tirumalaraya, was defeated or abdicated and went to Talakad.<sup>3</sup>

<sup>1</sup> *Ibid.*

<sup>2</sup> P. 58 of the same Report.

<sup>3</sup> *Journal of the Mythic Society*, Vol. XI, p 262.

Vamsharatnakara speaks to Sri Rangaraya's defeat, but according to *Seringapatam*, 14.64 and *T.-Narsipur*, 63, 'Raja Wadiyar overcame Tirumalaraya and seated himself on the jewelled throne.'

It has to be borne in mind that the dates of the first six Rajas as given in the table *supra* do not correspond to the table constructed from the inscriptions by Mr. Rice.<sup>1</sup> For in that table, the date of Hire-Bettada Chamaraja is given as 1513-1552 A.D. and of Timmaraja 1552-1571 A.D. for which we have 1493-1514 and 1512-1553 A.D. respectively as dates of birth and coronation. There is also considerable difference in the dates of the other Rajas. It seems clear, however, that there were twenty-two kings of the dynasty, who were actually crowned, up to and including Krishnaraja Wadiyar III (Mummadi), 1799-1868 A.D., the grand-father of our ruling Maharaja, whereas Mr. Rice's list furnishes only sixteen, if Hire-Bettada-Chamaraja and Timmaraja are excluded, possibly on the ground that they acknowledged the suzerainty of the Vijayanagar rulers and that it was only Bol-Chamaraj IV, who defeated Remati-Venkata, the Vijayanagar General and withheld payment of the tribute to the overlord Ramaraja. It is nevertheless significant that the list mentions this Chamaraja as the fourth, implying thereby two rulers of the same name, other than his father, besides himself. May they not be Hire-Bettada-Chamaraja and Hire-Chamaraja, (2) and (4) respectively of the Santanambuja? The intervening name Timmappa will then be explained, more especially in the light of the fact that Timmaraja, brother of Bol-Chamaraja is referred to as 'Immadi' therein. We have thus got a fairly complete and accurate genealogy of the Mysore Rajas from the Santanambuja.

The Mysore Rajas are not merely the political successors of the Vijayanagar Kings but in them, as kings of Karnata, are continued the destinies of the Karnata country over which, in former times, the Hoysalas, the Gangas and the Kadambas held sway. In a sense, it is the continuation of the famous Chalukya Empire, for Hampe and Anegundi were included within that Empire in the 10th century A.D. and ruled over by Jaina Princes, some three centuries prior to the landing on these banks of the Vijayanagar Kings to lay the foundations of a great Hindu Empire.<sup>2</sup>

It is interesting to observe that the Portuguese Chroniclers Paes and Nuniz, who describe, with fascinating details, the splendour and glory of the Vijayanagar court, now alas in ruins, also mention a nobleman

<sup>1</sup> P. 126 of 'Mysore and Coorg from the Inscriptions.'

<sup>2</sup> *Journal of the Mythic Society*, Vol. VII, p. 285.

of the first rank in the imperial court, called Kumara Virayya of Seringapatam, who is identified by Sewell with Hire-Chamaraja Wadiyar (4th in the list *supra*).

Says Paes (1537 A.D.)—‘As soon as the king (Krishnadevaraja, 1509-1530) is seated in his place he bids to sit with him three or four men who belong to his race, and who are themselves kings and the fathers of his wives; the principal of these is the King of Seringapatam and of all the territory bordering upon Malabar, and this king is called Cumarvirya and he seats himself as far in front as the king on the other side of the dais, the rest are behind.’

Nuniz refers to this king also—‘Combarberea had 8,000 foot and 400 horse and 20 elephants.’ After describing the battle of Raichoor, he proceeds—‘Combarberea begged from him the command of the van, he being the king’s father-in-law, and a great lord: he is king of Seringapatam and lord of a large estate. He brought with him 30 grown-up sons. . . .’

Prof. S. K. Aiyangar, in a discussion on this subject, dissents from the identification of Mr. Sewell, for reasons which are fully set out on page 55-6 of the *Journal of the Mythic Society*, Vol. II. Suffice it to say, that, in the light of the Santanambuja in the Jagan Mohan Palace, Hire-Chamaraja born in 1469 A.D. and crowned in 1479 A.D., may, not unlikely, be the person referred to in the Chronicles. Several of the professor’s objections are met by the age of Hire-Chamaraja furnished in the lotus flower and it is most probable that this Kumara Virayya, perhaps Chamaraja, was a nobleman of the front rank, a general of consequence, lord of Seringapatam, father-in-law of the king of Vijayanagar, father of 30 grown-up sons and all influential in the Imperial Court. With these premises, can we not count upon this identification of Sewell and the Santanambuja, as providing us with the missing link in the chain of Royal connections between the Mysore and Vijayanagar dynasties? It shall be a loyal and pleasant duty to record such close alliance.

Just as Vira-Ballala III was mainly responsible for organising resistance to the Mussalman invasions from the North, so Vijayanagar was ‘the direct outcome of an attempt by a Sovereign Ruler of Mysore, to secure national liberty for South India, a struggle for the beginning of which we have to go back for 1,500 years before the foundation of Vijayanagar. Vijayanagar was such an offspring of the national efforts of the strongest dynasty which was purely Mysorean—the Kannada dynasty of the Hoysalas.’<sup>1</sup> ‘It was again Mysore that survived

<sup>1</sup> *Journal of the Mythic Society*, Vol. XI, p. 13.

Talikota to continue the traditions of Vijayanagar, occupying the throne of the patriotic sovereign Vira-Ballala III who devoted his life to the cause of Hinduism and made it possible for the South Indian Hindus to be the Hindus they are to-day.' It is a matter of profound gratification to us that His Highness the Maharaja Sri Krishnaraja Wadiyar Bahadur is an ornament to that illustrious throne and by his noble example as a foremost Hindu of Hindus of our times, stimulates his subjects to be the Hindus they are to-day.

"The throne is adorned with golden plantain posts and golden mango leaves; has a bird set with jewels at top of the shaft of the umbrella; it is rendered charming by female figures at the sides of the flight of steps; has pearl tassels around the umbrella; has a tortoise seat; yalis on two sides, and creepers on four sides; has on the east face elephants, on the south horses, on the west infantry, and on the north chariots; has Brahma on the south, Siva on the north, and Vishnu in the middle; has Vijaya and other four lions, two sarabhas, two horses, and four swans at the angles; is beautified by the figures of the regents of the directions and Naga nymphs; is decorated with the *Swastika* diagram and a pearl awning and is open on all sides."

S. SRIKANTAIYA.

## THE INTELLIGENCE OF SCHOOL CHILDREN.\*

### I. PREVAILING EDUCATIONAL PRACTICE A DAMPER OF THE INTELLIGENCE OF CHILDREN.

THE well known author of "A Joysome History of Education" who has parodied the utterances of Educational Reformers, may well turn his sense of humour on the not altogether unintelligible theme of "Education the Leveller" to bring out the damping effect of the present day education upon the intelligence of children as the author of "Death the Leveller" has sung the theme that death reduces every man to the same condition, be his pedigree and station in life what they may.

The great defender of the freedom of children has said that any interference by the adult mind with the natural and spontaneous development of the child may kill the very soul of the child. This kind of nipping in the bud is going on in our homes and schools, so much so that the endowment and proclivities of children which, in years to come, may blossom into fruitful intellectual phenomena, are damped and brought to the dead level of the ordinary. There is no wonder then that when brought up in a regime of "freedom," children exhibit types of intelligence which are absolutely above comparison with those types of intelligence that our current methods of education produce. The great students of child psychology—Pestalozzi, Froebel, Dewey, and Montessori—recognise in the child a very great potentiality, and some even go so far as to invest childhood with a "Divine Essence," which is not merely spiritual, but also and profoundly intellectual. They exhort every parent and teacher to handle, nay even approach, the child with sufficient awe and inspiration. On the other hand, the rough handling that is accorded at present to the specimens of "Divine Essence" in our schools is as the poles apart from the delicacy with which it is advocated that they should be treated. The ill-ventilated class-room, the insanitary premises, the insolvent curriculum, the unwholesome books, the relentless birch, and the untrained and irresponsible teacher and a host of other evidences of our neglect of children betray, not our ignorance—for that would be pardonable—but our solicitude towards "the massacre of the innocents."

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\* *The Intelligence of School Children.* By DR. LEWIS M. TERMAN. Harapp. 7s. 6d.



The potentialities of children are scarcely studied by those who take upon themselves the responsibility of bringing them up. Well may we deplore with the poet :—

“ Full many a gem of purest ray serene  
The bright unfathom'd minds of children bear :  
Full many a flower is born to blush unseen,  
And waste its sweetness on the school-room air.”

Our comparative ignorance of the real nature of the intelligence of children is mainly responsible for the faulty methods current in the education of children. Without a clear knowledge of what really constitutes children's intelligence an educator can only grope in the dark.

## II. WHAT IS INTELLIGENCE ?

Biologically intelligence marks a stage in the evolution of the mind—a stage of development possessed only by mankind. Lower animals betray, doubtless, signs of mental life, but they are merely adumbrations of psychic activity provoked by their instinctive behaviour. These faint phases of mental life in their evolution pass on from the lower animal realm to that of mankind where they appear in the most developed stage of intelligence. Biologically, then, intelligence is the highest stage of development of the human mind ; and it is by the standard of intelligence that man is distinguished from an animal. Again different minds, by force of heredity and environment, will breed different types and grades of intelligence. It is by the standards of different types and grades of intelligence that man is distinguished from man.

Following the biological conception of intelligence, psychology defines intelligence as that attitude of the mind which it assumes when it is robust and dynamic. An act of intelligence involves :—

- i. a perception of the end in view,
- ii. an estimation and organisation of the means to that end,
- iii. the subjection of the means to individual, social and moral control,
- iv. an auto-criticism as to the propriety of the amount of endeavour made to the magnitude of the end.

It will be seen that when the mind is performing an act of intelligence it has to experience all the psychic phenomena usually brought under the cognitive, affective and conative processes. For the mind to perceive an end, to organise all available means to realise it, under the limitations of social and moral control and to adjust the means economically to suit the achievement under consideration, it must perform acts of

extreme volition and judgment, preceded by no less vigorous acts of apperception, reasoning, memory and imagination, the whole activity impelled by an intense feeling of interest. Thus an act of intelligence differs from an ordinary mental act which also involves the cognitive, affective and conative processes, not so much by the nature of the psychic elements operative in it but by the degree and intensity that characterise its operation. Psychologically, then, intelligence is an intense form of psychic activity resulting in the realisation of a desired end, the whole process governed by the principles of mental economy, social and moral suitability.

### III. THE DETERMINANTS OF INTELLIGENCE.

We may next discuss the determinants of intelligence. Inasmuch as intelligence is an intensified psycho-motor activity all that contributes to the growth or development of the mind may be said to form the determinant of intelligence. So also can we say that the laws of mental development govern the development of intelligence. Sense-perception, memory, imagination, conception, reasoning and judgment, feeling, emotion and volition, all these must properly function for the development of intelligence. But the operation of these psychical functions describes rather the process of the development of intelligence, while the determinants of intelligence ought to be sought for in the endowment of the mind and the nature of the content on which the mind is employed.

On the endowment of the mind three theories may be now examined. The propounders of these theories were led to them by a series of observations made on the disparity of intelligence among individuals, communities and races; and modern discoveries in the realm of child psychology and experimental pedagogy have only substantiated their findings. The fundamental tenets of their belief are that children are born unequally endowed, that each child selects from a common environment what its initial equipment desires and is fit for, and that this selective process goes on so relentlessly and yet so naturally that given the same kind of environment for a number of children for any period, they will be found to differ in their mental development at the end of the period as widely perhaps as they do in their physical constitution and physiognomy.

1. One of the most notable studies undertaken to discover the causes of the differences in intelligence in mankind was that of Francis Galton—a British ethno-psychologist. He once undertook a purely ethnological inquiry into the mental peculiarities of different races. As

he proceeded with his findings it was forced upon his attention that certain mental characteristics clung to families. This led him to a different kind of investigation from the one which he originally intended to carry on. At first he made a cursory examination of the kindred of about 400 illustrious men of all periods of history. The results of this examination were in his own words, "such as completely to establish the theory that genius was hereditary under certain limitations that required to be investigated." He then gathered a large amount of carefully selected biographical data, the accuracy of which he further corroborated from other historical sources.

He assumed that high reputation is a pretty accurate test of high ability—an assumption that possibly no scientist would seriously object to. He then examined the relationships of a large body of eminent men, namely the Judges of England from 1600 to 1868, the statesmen of the time of George III, and the Premiers during the hundred years before his time. From these examinations he made a survey of the laws of heredity in respect of genius. He then examined in order the kindred of the most illustrious commanders, men of letters, men of science, poets, painters and musicians of whom history speaks. He also discussed the kindred of certain divines and modern scholars. His findings further substantiated his original hypothesis that high ability was a matter of heredity. Lastly an examination of the relations of oarsmen and wrestlers proved the transmission of even the physical gifts from parent to offspring. The title of his epoch-making book "Hereditary Genius" must not lead one to imagine that it was merely genius that Galton tried to show was hereditary. In fact he examined different grades of intelligence and ability in the same callings of life as well as different grades of ability in different callings of life. The evidence was on all sides so conclusive that his theory that intelligence and ability were hereditary was the easiest possible inference. This, of course, as he himself observes is the rule to which there are notable exceptions. We are ourselves cognisant of the facts that some are not at all chips of the old block, and that some offshoots (to change the metaphor) are richer than the stalk. But these constitute rather the exception than the rule.

Since Galton's discovery, Darwin's theory of natural selection applied to psychological phenomena has led to no less interesting results. Given a variety of intelligence both in kind and degree, the laws of human nature positively tend to perpetuate the initial disparities. Further the initial variations of intelligence, acting on, and being acted upon by, environment, produce, by virtue of the law of natural selection,

a greater multiplicity of variations of intelligence and capacity,—so much so that it is utterly impossible to find two intelligences of the same kind and degree in human beings.

Galton's theory, then, is that there are various types of intelligence and various degrees of the same type, and the cause of this variation is heredity. Interpreted in the light of Darwin's theory of natural selection, Galton's theory would further imply that there is a positive tendency for the initial variations of intelligence to multiply in kind and degree on coming in contact with environment.

2. The "Theory of Original Nature" to which we may next draw our attention is one which is propounded by the eminent modern experimental psychologist Edward L. Thorndike. His theory, based upon experimental evidence is briefly this:—

The life of man is a double series—a series of effects produced in him by the rest of the world and a series of effects produced in that world by him. A study of these effects shows that men differ widely in their mental make-up so much so that it would probably be impossible to discover two men out of a million who would be alike in mental nature. Each man has an individuality which marks him off from other men, save for a few common traits which are the heritage of the human race. Children of the same physical age are found to be possessed of mental traits varying in quantity and quality, while each mental trait is also found in them in varying grades of efficiency. These variations are likely to increase as years pass. An idea as to the possible varieties of children with reference to mental traits may be had from the following example. Supposing the child's traits were only five, *a*, *b*, *c*, *d*, and *e* and these could be found in five differing grades of efficiency. Then there could be no less than 3,125 varieties of children with reference to the five selected traits. With hundreds of traits, each represented in hundreds of degrees, the possible varieties are practically infinite. We may casually observe how complex human nature is when possessed of such multitudinous variations of mental traits.

Thorndike advances several causes of the variations of mental traits in individuals. These may be said to be the result of natural laws quoted above in connection with Darwin, and these again are what we would call the determinants of varying intelligence. He traces the variations to what he calls the Original Nature of the individual, which among other matters includes sex, race, family growth or maturity and environment. Among these the most potent causes are ancestry, remote and near. If by remote ancestry we mean the race, the differences

involved are chiefly physical, while the customs, ceremonies and manners of the race greatly contribute to such traits of the mind as relate to character and the peculiarity of the race-intellect. The inheritance of these traits by the generations that follow is out of the scope of this article. Suffice it to say that such heritage is a fact and that it is a matter of the utmost importance to the educationist to base his theory and practice of education on the bedrock of race heritage.

The mental inheritance of the near ancestry or family (which in India is almost a synonym for community) is our immediate concern. What Galton found, Thorndike has also discovered, namely that there is ever so much greater resemblance in mental traits among the related than among the unrelated, and that the resemblances between the members of the same family are very great. The contributions of home training to these resemblances are practically little, and education hygiene and social forces must be reckoned with the original differences due to family heritage.

The influence of education in particular upon the varying intelligences of children, as has already been pointed out, is selective. The mental potentiality bequeathed to individuals of different families selects from the environment which also includes all educative forces, that which it can and which is suitable to its growth. Thus Galton and Thorndike would trace the differences in intelligence among individuals or children to the family or community in the Indian sense of the term.

Le Bon, a French Ethno-psychologist tries to explain the differences of intelligences among different peoples as being due to the arts, industries, institutions, social life, customs, morals and religion, in short the civilisation of a people. His writings are important for our purpose in so far as they throw light upon what really contributes to the different *types* of intelligence. We have been too much obsessed by the belief that the school is the workshop where intelligence is born and sharpened. To quote Le Bon. "Humanity has always been exceedingly loath to abandon its decayed ideas and its moribund gods."

Thus combining the three theories regarding the determinants of intelligence, we may say that intelligence is multiform in type and that children possess intelligence varying in type, form and degree, that no two children are found to be possessed of the same kind of intelligence to the same degree of efficiency, that intelligence is hereditary, that it is determined by the mode of life of the forbears of a people, that arts, industries, language, literature, customs, manners, morals, religion—in short the civilization of a people—greatly influence the heritage of intelligence, that environment—including all educational forces—simply

affords material for the endowed intelligence to select from, for its sustenance.

#### IV. THE SCHOOL AND INTELLIGENCE.

To think of school as the only place where intelligence is developed is to consider the intellectual life, or rather the mind outside the school, defunct. It must be remembered that in school the mind is made to live on certain scholastic materials which in the last analysis will be found to be the three proverbial R's and a certain amount of information (often unrelated to the practicalities of life) obtained through them, to burden the mind, and the process is one of syllogistic juggling which eats into the very fibres of the mental and physical constitution of the children. To think of those who have not passed through a school as unintelligent and uneducated betrays the grossest ignorance as to what mind, its development, and intelligence are. Life is a conglomeration of various activities and affairs, and man endowed with life is also invested with the mind-instrument which he has to employ for his well-being. Life is also a struggle in all its phases, the physical, intellectual, social, political and moral. Every problem of a serious nature in each of these departments of life presents a struggle. In order to enable the life to survive the mind must see the end or aim of each activity, must discover and organise the means to achieve the end economically, critically and praiseworthily. When it does all this it will reveal intelligence and grow in intelligence. The school tries to justify its existence by pretending to prove that it is the practising ground for the active engagements of life. This will be true only when the school can represent life and its problems within its walls. But the content of education in school is so different from the actual content of life's problems that it is hard to concede to it such a position.

#### V. TESTS OF INTELLIGENCE.

One of the most wonderful discoveries in the psychological world, and of the most supreme value to all educators is a series of tests that measure this dynamic aspect of the mind which we call intelligence. These tests can be estimated at their real value only when we know the utter inadequacy and impropriety of the tests we now have and employ so largely to gauge the worth of pupils in schools and colleges. Very often the teacher's opinion about a pupil is taken to indicate his worth. One cannot say what innumerable and perhaps unjustifiable personal considerations enter in the process of the formation of that opinion. The term "mischievous" applied to a boy whose buoyant spirit wants to find expression in some activity in a dull class-room,

"disobedient and haughty" to another who can straighten his back and stand erect to face his teacher; "dull and stupid" to an unfortunate one whose developing mind cannot keep pace with the rattle and prattle of a noisy teacher, "excellent" to a book-worm who can reproduce parrot-like the invaluable lore falling from the lips of teachers, and other such judgments on skill, character and intelligence are (alas!) often the verdicts which determine the life career of a boy. It will be seen that naïve judgments of this kind have no basis of comparison, no standards of measurement whatever.

The oral and written examinations with which we are only too familiar can never pretend to test the intelligence of children or grown-ups. They may test memory—only a small ingredient of the composition of intelligence. And even if some well organised and well-set tests do really discover intelligence, that intelligence can only be of the type that develops in schools—a scholastic intelligence. A perfect scholastic intelligence test is also based upon an arbitrary standard determined by local conditions and purposes. There can be hardly any scholastic tests which are universal in application. Very often, nay invariably, presumption and no scientific sanction warrants the employment of tests to verify intelligence.

The field of intelligence testing remained unexplored until Simon and Binet—two French Psychologists furrowed deeply into it. The problem before them was not that of discovering the best tests for measuring scholastic proficiency, (which even to-day remain undiscovered except for the oral and written tests and the teachers' opinions) but that of discovering the scale that would gauge the general intelligence which would be applicable in most situations in life. To this end Binet defined intelligence as involving the psychical processes to which we have already referred. To him the generality of intelligence did not mean its homogeneity. He admitted that intelligence had many aspects and types, and he saw that his tests would measure the known aspects and types of intelligence. In short, he organised the content and administration of his tests in such a manner that the efficiency of the psychical processes involved in acts of intelligence was adequately measured.

The nature of Binet's tests being such, the problem of standardising them presented no end of difficulty. Fifteen years he laboured and not in vain, for he succeeded not only in standardising the tests, but also in finding a way to express suitably the measured intelligence. Both of these problems he solved by a combined method, thus:—

He had discovered in his experiments with mentally deficient

children a method of expressing the amount of mental deficiency in terms of years. The mentality of a subnormal child say 9 years of age when compared with the mentality of a normally developed child of the same age could be said to be deficient by one, two or three or more years. These standards of deficiency suggested to him the standards of efficiency also. It is obvious that if he could discover what might be called a normal intelligence with reference to a particular age, then a complete scale of intelligence could be established. He set about getting a standard of normal intelligence for each age in this manner. He constructed a large number of tests the answers to which he assumed would require the operation of psychical processes involved in intelligence, and graded then from the easiest to the most difficult. He next took hundreds of children of each age beginning with 3 years and ending with the adult age (above 15 years). He then set each of these graded tests to each child in each age group. He found that the percentage of children of different age groups answering each test satisfactorily was different. In some age groups all children could answer the test, in some only 10 per cent. and in others 20 per cent. and so on. He then fixed a test for an age group in which 75 per cent. of the children tested would pass the test. Thus he arrived at a scale of intelligence which consisted of a definite number of tests fixed for each age. According to it each age group from 3 to 10 years old had 5 tests, with the exception of the 4 years group which had only 4 tests. The 12 years, 15 years and adult age group had also 5 tests, making in all 54 tests. It will be noticed that the 11th, 13th and 14th year groups are omitted. This is because the number of children of those age groups that satisfied the tests offered them did not come up to 75 per cent. The omission of these age groups for testing on the part of Binet is significant of the fact that he faithfully constructed his scale on the results he obtained. One of the reasons that may explain why those age groups could not give the necessary evidence is that the period covered by those ages is that of pre-adolescence and adolescence—a period of "stress and strain" during which children betray states of physical and mental inequilibrium.

The Binet scale, then, determines the mental age of a child; he satisfies the tests fixed for a certain age. A child who is physically 10 years old may satisfy the 10th year tests, and will then be considered mentally normal; if he satisfies also the tests of the 12th year he is abnormal or precocious by 2 years, while his failure to satisfy the 9th year tests, will put him down to the 8th year mentality—he will be subnormal by 2 years.



It is hardly necessary to restate what a great improvement the Binet scale has made upon naïve judgments upon the intelligence of children. No longer can such judgments of a child as "dull," "stupid," "intelligent," "excellent," have any meaning. On the other hand scientific accuracy attaches to such a statement as "this boy is below or above normal by 2 years," just as to the statement that a patient has fever of 104 degrees.

Binet's scale does not test school intelligence, and that is the greatest point in its favour: it tests intelligence in general. Several tests of a scholastic nature that were suggested to him he disregarded, as he thought they would test not the native intelligence but "tutored" intelligence, so to speak.

The value and uses of these tests are described elsewhere (*vide* the article on "Measurement of Intelligence" in the *Mysore Economic Journal*, February 1921). Here it may be stated that Binet opens a vast avenue of psychological research. The very ideas that intelligence is of different types and that the school only fosters a very narrow type of intelligence are sufficiently revolutionary to us whose thinking is ancient and tradition-ridden. If the school and its activities continue to be as they are, it is to be feared that the various types of intelligence that the activities outside the school foster in the individual will be discouraged, and in their places will be substituted a single type of scholastic intelligence between which and the every day affairs of life there is, at present, such a wide gulf. If we could believe in the existence of different types of intelligence, and recognise the usefulness of these types of intelligence in the various avocations of life, we should certainly feel an imperative need for reorganising the whole school system in such a manner that it would sustain and develop the native intelligence of children, instead of grinding them in one common mill into one kind of product.

The Binet scale cannot be said to be perfect, inasmuch as it was the first of the kind invented. A number of individual experimental psychologists, some of whom have already been mentioned, have done a great deal to measure the efficiency of individual mental traits and processes. In Germany and America, and latterly in England, experimental psychological and pedagogical laboratories have been established where attempts are being made to render educational results in terms of scientific precision. But the body that has done most to carry further the pioneer attempts of Binet in the field of the measurement of intelligence is the "Stanford Revision and Extension of the Binet Simon Intelligence Scale Committee," of which Lewis M. Terman, Professor of

Education, is the leader. His two works, "The Measurement of Intelligence" and "The Intelligence of School Children" are scientifically conceived and experimentally executed. His second work furnishes a great mass of experimental data worked upon with scientific precision. The manner in which the individual differences in the native endowment of children are brought out and interpreted throws a flood of light upon the whole investigation of the mental growth of children, while it also suggests ways and means of discovering in them different types of intelligence and also fostering their development. The discovery of the intelligence-quotient and the way it may be used to predict the intellectual vicissitudes of children, calls for a careful study of the work by all who are concerned with the education of children and the training of teachers. The great scope which the Landord Revision Scale gives over and above the original Binet Scale for applying the principles of intelligence measurement to any local conditions makes the work a valuable contribution to experimental psychological literature and scientific methodology.

S. P. CHINNAPPA.

## FROM HUME TO GREEN.

### (IV) *Laissez Faire* IN PRACTICE.

THE Industrial Revolution, to which reference has already been made, had momentous consequences on subsequent history. The vast wealth which the new inventions helped to produce, enabled England to break down the tyranny which Napoleon sought to impose on Europe. The Industrial Revolution, again, brought into existence a new social class, which rapidly grew in wealth and importance. This class was unrepresented in Parliament, which continued to be dominated by the landed interest. If it was anomalous that a ruined mound and an uninhabited park should send two representatives each to Parliament, the anomaly became more flagrant when large and flourishing towns like Manchester and Birmingham could send no representatives to Parliament. The excesses, however, of the French Revolution had produced among the governing class an aversion to any organic change. The successive motions for parliamentary reform brought forward by Lord Grey in the House of Commons, in 1792, 1793 and 1797, were all thrown out by overwhelming majorities. Later on, the Great War absorbed the best energies of the nation. When the war was ended, the demand for parliament reform revived and this demand was further quickened by the intense misery among the working classes produced by the crushing weight of the war taxation. "When the fears and animosities accompanying the War with France had been brought to an end, and people had once more a place in their thoughts for home politics, the tide began to set towards reform. The renewed oppression on the Continent by the old reigning families, the countenance apparently given by the English Government to the conspiracy against liberty called the Holy Alliance, and the enormous weight of the national debt and taxation occasioned by so long and costly a war, rendered the Government and parliament very unpopular. Radicalism, under the leadership of the Burdetts and Cobbetts, had assumed a character and importance which seriously alarmed the administration: and their alarm had scarcely been temporarily assuaged by the celebrated Six Acts, when the trial of Queen Caroline roused a still wider and deeper feeling of hatred. Though the outward signs of this hatred passed away with its exciting cause, there arose on all sides a spirit which had never shown itself be-

fore, of opposition to abuses in detail. Mr. Hume's persevering scrutiny of the public expenditure, forcing the House of Commons to a division on every objectionable item in the estimates, had begun to tell with great force on public opinion, and had extorted many minor retrenchments from an unwilling administration. Political economy had asserted itself with great vigour in public affairs, by the petition of the merchants of London for free trade drawn up in 1820 by Mr. Tooke and presented by Mr. Alexander Baring, and by the noble exertions of Ricardo. During the few years of his parliamentary life, his writings, following up the impulse given by the Bullion controversy, and followed up in their turn by the expositions and comments of my father and McCulloch (whose writings in the *Edinburgh Review* during those years were most valuable), had drawn general attention to the subject, making at least partial converts in the Cabinet itself, and Huskisson, supported by Canning, had commenced that gradual demolition of the protective system, which one of their colleagues virtually completed in 1846, though the last vestiges were only swept away by Mr. Gladstone in 1860. Mr. Peel, then Home Secretary, was entering cautiously into the untrodden and peculiarly Benthamic path of Law Reform. At this period, when Liberalism seemed to be becoming the tone of the time, when improvement of institutions was preached from the highest places, and a complete change of the constitution of Parliament was loudly demanded in the lowest, it is not strange that attention should have been roused by the regular appearance in controversy of what seemed a new school of writers, claiming to be the legislators and theorists of this new tendency." (MILL, *Autobiography*.)

The school referred to is the group of thinkers known as the philosophical radicals, who derived their inspiration from the teaching of Bentham. It was the merit of these thinkers that they presented reformers with a definite and reasoned creed at a time when popular agitation was likely to exhaust itself in empty declamation or ill-considered action. Bentham himself took no part in active politics. He exerted his influence through his writings. It was reserved for the ablest of his disciples, James Mill, to give the distinguishing character to the utilitarian propaganda. A man of strong personality and gifted with remarkable conversational powers which he used largely as an instrument for the diffusion of his opinions, Mill worked through his personal influence on practical politicians. His authority was potent with men like Brougham, Grote, Ricardo and Joseph Hume. Francis Place, the leader of the working classes, who carried on a vigorous agitation for political reform, acknowledged Mill as his master and

consulted him at every stage. The *Westminster Review*, which was founded in 1824, became the recognized organ for the expression of Mill's political views and had considerable influence in moulding opinion. Above all, the famous article on Government which Mill contributed to the *Encyclopædia Britannica*, became the manual of the reformers and it was no mean factor "in the train of events culminating in the Parliamentary Reform Bill of 1832."

The chief service rendered by utilitarianism consisted in the fact that it prepared the way for the advance of democracy. Its cardinal principle that every one is to count for one and no one for more than one emphasized the claims of the greatest number as against the ascendancy of the few and this principle was presented not as a mere matter of philosophical theory but as the basis of a working creed which found acceptance among all classes and shades of opinion. How thoroughly the utilitarian principles leavened public opinion may be seen from the fact that even conservative statesmen like Canning, Huskisson and Peel, strove to give effect to them in matters of foreign policy and of economic and legal reform, though they shrank from applying them to questions of parliamentary reform. The working classes, who were profoundly dissatisfied both with the liberals and conservatives, started a movement of their own and yet the Peoples' Charter, 1838, was "a strictly political programme which conformed to the doctrines of democratic Benthamism."

Dicey says that the Parliamentary Reform Act, 1832, was not the handiwork of the utilitarians. The fact remains that when the whigs came to power in 1830, pledged to carry out parliamentary reform, they appointed a Committee with Lord Durham, a pronounced radical and the friend and disciple of Bentham, as chairman, to prepare a scheme of reform. The report which was presented by the Committee was largely Durham's work and the substance of the Committee's recommendations was embodied in Lord Russell's famous speech introducing the Reform Bill which was ultimately passed by Parliament. Lord Durham was also the author of the Canadian Report of 1839, which became the model for all self-governing colonies. He is thus entitled to the credit of having revolutionized not only the internal but the Colonial policy of Great Britain. Two other measures of the first importance were also the work of men trained in the school of Bentham, viz., the Poor Law Act, 1834, which swept away a mass of abuses and placed poor relief under the direct supervision of the State; and the Municipal Reform Bill of 1835, which initiated the democratization of Local Government in England.

It is however, in the field of Law that utilitarianism has left its most enduring effect. In 1808, Romilly, Bentham's earliest disciple, began his noble work of improving the Criminal Law. On his death in 1818, this work was taken up by Sir James Mackintosh, Peel and others and as a result of their labours, the Criminal Law has been made more humane. Capital punishment has been limited to cases of murder. The whipping of women, the pillory, and hanging in chains have all been abolished. Important modifications have been introduced into every branch of the law in order to widen the scope of individual liberty which is one of the cardinal tenets of utilitarianism. The Marriage Act, 1835, and succeeding legislation have enlarged the sphere of personal freedom for women. The development of freedom in dealing with property has been the object of a number of acts, *e.g.*, the Prescription Act, 1832, the Inheritance Act, 1833, the Wills Act, 1837, the Real Property Act, 1845. The application of the Toleration Act of Unitarians, 1813, the Test and Corporation Act, 1828, the Roman Catholic Relief Act, 1829, the Non-Conformists' Chapels Act, 1844 and other measures sought to give reality to religious freedom. All legal restraints on freedom of discussion have been removed. The repeal of the Navigation Laws in 1846 and 1849 has removed the restrictions on freedom of trade. Lastly, legal procedure which was a matter of reproach before Bentham began to write and on the effectiveness of which depends the enforcement of a citizen's rights was substantially amended by a series of measures which culminated in the Judicature Act, 1873, so much so that Lord Bowen, writing in 1887, was able to declare that in that year it was not *possible* for an honest litigant in Her Majesty's Supreme Court to be defeated by any mere technicality, any slip, any mistaken step in his litigation. (For the whole section see DICEY, *Law and Opinion in England*.)

It is a remarkable fact that the utilitarians, who have left to their credit such splendid work in the field of political and legal reform, failed to enlist the sympathies of the working classes. And the reason, it is not difficult to discover. The utilitarians, who were the chief elaborators of the classical Political Economy, held a very narrow view of the social question, the relation between capital and labour, which lay behind the political controversies and in practice came too often to limiting possible improvement to the one condition of letting things alone.

Towards the close of the 18th Century the employment of machinery on a large scale and the rapid growth of production of goods required to meet the demands of foreign markets gave industry a preponderatively competitive character. A class of employers arose who

felt themselves untrammelled by the customary restraints which had marked the domestic stage of industry. Under the old system the employer worked in his own cottage assisted by his own wife and children and a number of apprentices whom he trained in trade and for whose moral education he felt responsible. A graphic description of the life of such an employer is given by Defoe. The land near Halifax, he says, "was divided in to small enclosures from two acres to six or seven each, seldom more, every three or four pieces of land had an house belonging to them. . . . hardly an house standing out of a speaking-distance from another. . . . we could see at every house a tenter, and on almost every tenter a piece of cloth or kersie or shaloon. . . . Every clothier keeps one horse, at least, to carry his manufactures to the market; and every one, generally, keeps a cow or two or more for his family. By this means the small pieces of enclosed land about each house are occupied, for they scarce sow corn enough to feed their poultry. . . . The houses are full of lusty fellows, some at the dye-vat, some at the looms, others dressing the cloths the women and children carding or spinning; being all employed from the youngest to the eldest. . . . Not a begger to be seen nor an idle person."

It is no wonder that in such circumstances a personal attachment grew up between the master and the workmen and except in cases of sickness or of death, the workmen rarely desired to change their masters. Even when an apprentice married and went to live in his own home the master lent him money if he was sick and kept him on when trade was slack. There were of course many masters who were selfish and tyrannical but that the system worked for the common good and that it was appreciated as such will be obvious from the fact that the law of apprenticeship was repealed against the wishes of the mass of workmen. The introduction of the factory system put an end to all this. The cash nexus replaced the old human tie. The new class of employers, who lived away from the workmen, made enormous fortunes but took little or no personal interest in the workers. "It is as impossible," said one "to effect a union between the high and low classes of society as to mix oil and water; there is no reciprocity of feeling between them." "There can be no union," said the same employer, "between employer and employed because it is the interest of the employer to get as much work as he can, done for the smallest sum possible."

The factory population consisted of agricultural labourers who were compelled to leave their cottages by a series of enclosure acts, destitute Irish families and disbanded soldiers. The men however formed a small part. The greater proportion consisted of women and children. In 1833 the cotton mills employed 60,000 adult males, 65,000 adult females,

43,000 boys under eighteen and 43,000 girls under eighteen, and about half of those under eighteen were less than fourteen years old. The majority of the mills worked 15 hours a day. The doors were locked during working hours and the workmen were not even allowed to send for water to drink. They were employed on such wearing, mechanical processes that the factory has been appropriately described as 'a vast automaton, composed of various mechanical and intellectual organs, acting in uninterrupted concert for the production of a common object, all of them being subordinate to a self-regulated moving force.' This subordination of the human being to the machine and the peculiar composition of the body of the workmen, gave rise, in the terrible words of Karl Marx, to a barrack discipline which was enforced in defiance of all the dictates of humanity. The punishments resolved themselves into so many fines and deductions from wages. In one of the mills near Manchester workmen were subject to the following penalties:—

	s.	d.
Any spinner found with window open .. ..	1	0
Any spinner found dirty at his work .. ..	1	0
Any spinner found washing himself .. ..	1	0
Any spinner leaving his oil can out of its place ..	1	0
Any spinner repairing his drum banding with his gas lighted .. ..	2	0
Any spinner slipping with his gas lighted .. ..	2	0
Any spinner putting his gas out too soon .. ..	1	0
Any spinner spinning with gaslight too long in the morning .. ..	2	0
Any spinner having his lights too large for each light	1	0
Any spinner heard whistling .. ..	1	0
Any spinner having hard ends hanging on his weights	0	6
Any spinner having hard ends on carriage band ..	1	0
Any spinner being five minutes after bell rings ..	1	0
Any spinner having roller laps, no more than two draws for each roller lap .. ..	0	6
Any spinner going further than the roving room door when fetching rovings .. ..	1	0
Any spinner being sick and cannot find another spinner to give satisfaction must pay for steam per day ..	6	0
Any spinner found in another's wheel gate .. ..	1	0
Any spinner neglecting to end his sweeping three mornings in the week .. ..	1	0
Any spinner having a little waste on his spindles ..	1	0

(The Town Labourer, by J. L. and BARBARA HAMMOND.)



Whilst the employers lived in country houses away from the manufacturing towns, the factory workmen "festered amidst the appallingly insanitary streets and alleys which had grown up around the factories." In 1844 F. Engels passed through Manchester, and he describes his personal experiences in the following passage:—

"At the bottom flows, or rather stagnates, the Irk, a narrow, coal-black, foul-smelling stream, full of debris and refuse, which it deposits on the shallower right bank. In dry weather, a long stream of disgusting, blackish-green slime pools are left standing on this bank, from the depths of which bubbles of miasmatic gas constantly arise, and give forth a stench unendurable even on the bridge forty or fifty feet above the surface of the stream. . . .

"Below the bridge, you look upon the piles of debris, the refuse, filth, and offal from the courts on the steep left bank; here each house is packed close behind its neighbour, and a piece of each is visible, all black, smoky, crumbling, ancient, with broken panes and window frames; The background is furnished by old barrack-like factory buildings. On the lower right bank stands a long row of houses and mills; the second house being a ruin without a roof, piled with debris; the third stands so low that the lowest floor is uninhabitable, and therefore without windows or doors. Here the background embraces the pauper burial-ground, the station of the Liverpool and Leeds railway, and, in the rear of this, the workhouse, which, like a citadel, looks threateningly down, from behind its high walls and parapets on the hill-top, upon the working-people's quarter below. . . .

"Everywhere heaps of debris, refuse, and offal; standing pools for gutters, and a stench which alone would make it impossible for a human being in any degree civilised to live in such a district. . . .

"Immediately under the railway bridge there stands a court the filth and horrors of which surpass all the others by far, just because it was hitherto so shut off, so secluded that the way to it could not be found without a good deal of trouble. I should never have discovered it myself, without the breaks made by the railway, though I thought I knew this whole region thoroughly. Passing along a rough bank, among stakes and washing-lines, one penetrates into this chaos of small, one-storied, one-roomed huts, in most of which there is no artificial floor; kitchen, living and sleeping room all in one. In such a hole, scarcely five feet long by six broad, I found two beds—and such bedsteads and beds!—which, with a staircase and chimney-place, exactly filled the room. In several others I found absolutely nothing, while the door stood open, and the inhabitants leaned against it. Everywhere before the doors refuse

and offal; that any sort of pavement lay underneath could not be seen but only felt, here and there, with the feet. This whole collection of cattle-sheds for human beings was surrounded, on two sides by houses and a factory, and on the third by the river, and beside the narrow stair up the bank, a narrow doorway alone led out into another almost equally ill-built, ill-kept labyrinth of dwellings."—(Quoted by G. H. PERRIS in his *Industrial History of Modern England*.)

The workmen received incredibly low wages, 15s. a week, half of which went in taxes to the State. These wages were often paid in bad coins by their employers who had bought them expressly for the purpose. The workmen were further, imposed upon by the truck system which enabled the employer to become a retail dealer with power to over-price his goods. Combination laws made it illegal for workmen to combine either to reduce hours or raise wages. Mr. and Mrs. Hammond do not hesitate to declare that in the light of the Home Office papers none of the personal rights attaching to Englishmen possessed any reality for the working classes. The Vagrancy Laws were used by the Magistrates to put into prison any man or woman who seemed to be an inconvenient or disturbing character. Two men were flogged under these Laws for distributing Cobbett's pamphlets.

It was, however, the ruthless exploitation of women and children in factories and mines that constituted the most crying evil of the new industrial system. Women were forced to work for not less than 12 hours at a stretch and had thus neither means nor opportunity to attend to their domestic duties and long hours of work again in a bad atmosphere and low wages told upon both morals and constitution.

Cart-loads of pauper children who were drafted into the factories from workhouses were forced to work from 5 A.M. to 8 P.M. and were treated with incredible cruelty. "In stench, in heated rooms, amid the constant whirling of a thousand wheels, little feet were kept in ceaseless action, forced into unnatural activity by blows from the heavy hands and feet of merciless overlookers, and the infliction of bodily pain by instruments of punishment, invented by the sharpened ingenuity of insatiable selfishness." Boys and girls of tender age who were suspected of attempting to run away had irons riveted on their ankles with long links reaching up to the hips and were forced to work and sleep in these chains. The strain on them was excessive. A witness told a committee that his child, a boy of 6, would say to him,—“Father, what o'clock is it?” If he replied,—“Seven o'clock,” the child would answer,—“Oh, is it two hours to nine o'clock? I cannot bear it.” Children lost all appetite for food. The flue used to choke their lungs and when

spitting failed to expel it, emetics were given. The punishments inflicted on them for arriving late in the factories were so heartlessly severe that a witness stated that he had known a child who had reached home at 11 P.M. in the night, get up at 2 next morning in panic and limp to the mill gate. Fathers were known to beat their own children to save them from a worse beating by the overseers. Lord Belgrave was hardly guilty of using exaggerated language when he said,—“Wealth was pursued in this country with an eagerness to which every other consideration was sacrificed, and with excesses calculated to call down the vengeance of Heaven, if the Legislature did not put a stop to them.”

In 1840 a commission was appointed to investigate the whole subject of the employment of women and children in collieries and mines. The revelations made by this commission made it clear that the mining industry was carried on ‘with as complete a disregard for humanity and decency as could be found in the society of heathen savages.’ (HAVELL—*The Chartist Movement.*) Adult girls and even women were allowed to work underground with men and boys, and the dress of both sexes was so alike as to be practically indistinguishable. Children from five to seven or eight years of age were entrusted with the shutting of trap doors on which the whole system of ventilation depended and these children would sit at their task for twelve hours consecutively in “solitude, silence and darkness.” “I can never forget,” wrote one of the Commissioners, “the first unfortunate creature (of this class) that I met with; it was a boy of about eight years old, who looked at me as I passed through with an expression of countenance the most abject and idiotic—like a thing, a creeping thing peculiar to the place.”

In many mines children were compelled to draw trucks. “A girdle is put round the naked waist, to which a chain from the carriage is hooked and passed between the legs and the boys crawl on their hands and knees, drawing the carriage after them.” “Chained, belted, harnessed like dogs in a go-cart, black, saturated with wet, and more than half-naked—crawling upon their hands and feet, and dragging their heavy loads behind them—they present an appearance indescribably disgusting and unnatural.”

The inhuman treatment to which the children were subjected by the masters almost staggers belief. A sub-commissioner met a boy crying and bleeding from a wound in the cheek, and his master explained that the child was one of the slow ones, who would only move when he saw blood. He had thrown a piece of coal at him, and he often adopted a like means.

N. NARASIMHA MOORTHY.

## THE THEORY OF RELATIVITY.

### 1. THE ABSOLUTE AND THE RELATIVE.

THERE are two parties to every observation, the observer and the observed. What we see depends not only on the object seen, but also on our own circumstances including personal idiosyncracies. Generally we try to eliminate our own share in the observation so as to obtain a picture of the world acceptable to all observers on the earth. This is essentially the first step in the development of knowledge. *We do not thereby get rid of an observer ; we only specify him definitely.*

The question naturally arises, is it possible to obtain absolute knowledge, *i.e.*, knowledge which is the same to all. The answer to this question was in the affirmative according to ancient Greek philosophers. It was based on the Socratic doctrine of innate ideas, according to which the mind by its very nature has the capacity to think of absolute ideas of hardness, coldness, motion, etc. The root of the word absolute signifies "taking away," *i.e.*, removing the qualities from the things and grasping the idea of coldness apart from anything that is cold, motion apart from any moving body. Thus sitting in his easy chair, a Socratic observer, by referring everything to his innate absolute ideas of all qualities, can describe knowledge that is absolute, *i.e.* the same to all.<sup>1</sup> Thus all physical laws will be described in exactly the same way, whatever be the "circumstances of the observer."

The modern view however is that a law of nature is merely a statement of the mutual relations between various physical quantities.<sup>2</sup> A phenomenon is observed by various individuals, each from his stand-

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<sup>1</sup> "The absolute may be defined as a relative which is always the same, no matter what it is relative to."—EDDINGTON.

<sup>2</sup> Cf. Poincaré (*Science and Hypothesis*):—"Experiments only teach us the relations of bodies to one another."

"Knowledge consists of the play of relations."—LARMOR.

"Knowledge is dynamic. It is an effort to transcend the apparently given. It is always pointing beyond itself." According to this view, everything is relative to knowledge.—LORD HALDANE.

point. These are reviewed; the parts due to the view-points of the observers are removed, and a law is then written down, not any absolute law of nature, but one as general as possible concerning the inter-relations of physical events. In this way, "modern science and philosophy reveal with increasing emphasis that we superimpose our own human qualities on external nature to such an extent that it has been seriously asked whether the external world has any real or absolute existence outside our minds." This is the general tendency of the Einstein doctrine of relativity as opposed to the Socratic theory of innate ideas. Whereas according to the latter absolute knowledge exists, and can be comprehended by the human mind, the former challenges any such claim, and asserts that all knowledge is purely relative.<sup>1</sup>

In particular Einstein has pointed out that we very often confuse perceptions and conceptions. Suppose an infinite empty space in which there is a single material body. Is there any method of determining whether the body is at rest or in motion? It is not getting nearer to or farther from any object, for there is no object for it to get nearer to or farther from. If somebody should say that it is moving with a velocity of a hundred miles a second, we can as well say that its velocity is a million miles a second. Who shall say, who is right? Motion is purely relative; and in the world we perceive only relative motion. In spite of this difficulty of conceiving absolute motion, Newton laid down the law of inertia, *viz.*, a body continues in its state of rest or of uniform motion in a straight line unless disturbed by external agents. The external agents are of course material bodies, and this law lays down the state of rest and motion of a body in empty space without any other bodies as though motion is absolute.

Another notable instance of this confusion leading us to false ideas about the absolute character of our knowledge is our conception of space and time. These are the most fundamental of all, being the frame in which everything else is set. They are merely ideas, not sense-

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<sup>1</sup> It is interesting to notice that the views of ancient Hindu philosophers is in agreement with the modern view. According to them, the world and everything we see is Maya. The word Maya is generally translated as illusion but the translation appears to be incorrect. What they meant by Maya was merely that the world is not what you see it to be; what you see is due to the circumstances and idiosyncracies of your own mind. You impose your qualities to such an extent that the world as it exists (*i.e.* its reality) is different from the world you see (*i.e.* as perceived by the senses). Only God and the knowledge of God are absolute; and they cannot be comprehended by the relative senses. Thus they sing,

न ता चक्षुर्च्छति, न वाग्च्छति, नो मनः.

perceptions. *We perceive matter ; we infer space.*<sup>1</sup> But for matter, we should have no conception of space. Similarly *we perceive events following one another ; we conceive time.* Space and time are not real in the sense that matter is real. We have been hitherto thinking of them as absolute and independent of each other. This seems a very reasonable hypothesis ; but Einstein has shown that this is false ; that *space and time are not independent, but are indissolubly connected with each other through the motion of the observer.*<sup>2</sup>

## 2. THE NATURE OF GEOMETRY.

All knowledge of the world is derived by measurement in terms of what is commonly called the standard. By length and distance, we mean a quantity obtained by measurement with a rigid scale free from certain definable defects which we can easily recognise, *e.g.*, given a scale, we can immediately say whether it is a rigid one. Our knowledge of space rests on these measurements and therefore on the behaviour of material scales. And the science which embodies this behaviour is geometry.

Thus defined we notice that geometry is closely allied to physics. It embodies the behaviour of rigid scales—the properties of matter. To obtain a knowledge of the world we investigate with some kind of apparatus. Exploring with a scale, we derive the science of geometry ; with a magnetic needle, the magnetic field. So far as experience goes, we find that the laws obeyed by these measure-relations are those of Euclidean geometry, *i.e.*, the space of experience is Euclidean. But after all, our perceptions are very crude measures, and it is conceivable that these relations of matter may obey somewhat different laws, *i.e.*, space may be non-Euclidean or warped.

Let us look at the problem from another point of view. We know what a geometrical axiom is. It is generally defined to be a self-evident truth. It is a fundamental assertion dictated by experience. It cannot be proved. Of these we may particularly notice two *viz.*, (1) only one straight line can pass through two given points, (2) through a given point only one parallel can be drawn to a given straight line. Starting

<sup>1</sup> Cf. Poincaré (*Science and Hypothesis*):—"None of our sensations if isolated, could have brought us to the concept of space; we are brought to it solely by studying the laws by which those sensations succeed one another." A sensation is an equivalent of perception.

<sup>2</sup> Cf. Minkowski:—"The views of time and space, which I have to set forth, have their foundation in experimental physics. Therein is their strength. This tendency is revolutionary. From henceforth space in itself and time in itself sink to mere shadows, and only a kind of union of the two preserves an independent existence.

from a system of axioms, we deduce other results by a method of reasoning which we are compelled to admit as correct.<sup>1</sup> A question naturally arises, suppose I deny the truth of an axiom and replace it by another; what is the result? From the new axioms as fundamental, we may be able to build up a new system of geometry. If this is self-consistent, *i.e.* if its propositions do not contradict each other, we must admit it as valid. One system may be more convenient than another, being more in accord with experience. But both stand to reason and are correct. And we say that a proposition is true or not according as we can or cannot deduce it from the axioms by arguments which stand to our reason.

For a long time, a proof of the second axiom—Euclid's parallel postulate—was sought in vain. Finally at the beginning of the nineteenth century, it was shown that the proof is impossible. Denying the second axiom, and assuming that through a given point several parallels may be drawn to a given straight line, Lobatchewsky established a system of geometry in which the sum of the angles of a triangle is always less than two right angles. But if we assume that no parallel can be drawn, and that there may be exceptional cases of a pair of points through which any number of straight lines can be drawn,<sup>2</sup> we arrive at Reimann's geometry in which the sum of the angles of a triangle is always greater than two right angles. Between these different systems of geometry, we may take that which is in accord with measurements. Hitherto we have believed that space is Euclidean, because our measures have made it appear so. If now the measures of some parts of space do not conform to Euclid's geometry, we should have no hesitation in accepting that space there is non-Euclidean. The properties of space cannot be determined by reasoning but only by measurement. Thus the term space means "measured space" and the theory of Relativity finds that

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<sup>1</sup> This is essentially the mathematical method. "Pure mathematics consists entirely of such asseverations as that if such and such a proposition is true of anything, then such and such a proposition is true of that thing. It is essential not to discuss whether the first proposition is really true, and not to mention what the anything is of which it is supposed to be true. Thus mathematics may be defined as the subject in which we never know what we are talking about, nor whether what we are saying is true."—BERTRAND RUSSELL.

<sup>2</sup> Suppose you imagine on the surface of a sphere infinitely flat animals constructing a system of geometry. They will accept that no parallel can be drawn to a given straight line through a given point (the straight line itself being the shortest distance between the two points, *i.e.*, the great circle joining them) and that in exceptional cases (through the extremities of a diameter) any number of straight lines (or great circles) can be drawn through two points. Reimann's geometry of two dimensions is thus the geometry of the sphere.

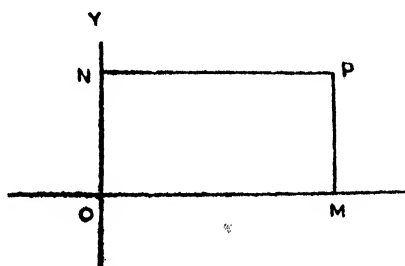
experiments carried to greater accuracy than heretofore decide in favour of non-Euclidean space in the neighbourhood of massive bodies.

### 3. THE IMPORTANCE OF A FRAME OF REFERENCE.

What is to be understood by the term "a point in space"? Space is a vague word of which we have not any definite conception, and a point in space is meaningless unless it can be made to coincide for observation with a certain point of a rigid body. When a point does not coincide with a point of a rigid body, we imagine the existing rigid body to be supplemented in such a way that the object whose position is required is reached by a completed rigid body. Thus in the familiar method of specifying the position of a point in a plane by the distances from two mutually perpendicular lines, or in space by the distances from three mutually perpendicular planes, the sets of axes together with the measuring scales must be supposed rigid. Three measurements are necessary to fix a point in space, and for this reason space is said to be of three dimensions and the measurements are called co-ordinates.<sup>1</sup> For physical purposes the above system of co-ordinates must be supplemented by clocks to determine the times at which events occur, *e.g.*, if a point is in motion, it is not enough if only the various positions of the point are specified; it is necessary also to state the times at which the point occupies them. A system of axes with its clocks is called a Frame of Reference, and every observer must carry with him such a frame. All objects which partake of his motion form his system, *i.e.*, his system will consist of all those objects which are at rest relative to him.

It is at once obvious that the observer can attach his co-ordinate axes to any rigid body belonging to his system, and fix them in any direction he pleases. If for any reason, he prefers to use a new reference frame, the co-ordinates will change, and there is a definite relation between the new co-ordinates and the old which is termed a transformation of co-ordinates. A question therefore arises: is there any particular frame referred to which natural laws assume a simple mathematical

<sup>1</sup> Thus the position of a point P in a plane is fixed by OM, ON which are called the co-ordinates of P. The rigid system of two rods OX, OY is supplemented by another MP so that P coincides with an extremity of this rod. In practice however, the co-ordinates are not actually determined by constructions with rigid rods but by indirect means.





form? Does it make a difference in the mathematical expression of a physical law if you use different reference frames? The answer to this question is embodied in the principle of Relativity according to which no one frame is more suited than any other.

Suppose we wish to investigate the laws of motion of a material body. If a particle is moving in a straight line, it is obvious that the motion is most simply expressed by taking a fixed point on the straight line as the origin from which to measure distances. If a particle is moving along a curve, the student of mechanics is aware that in some cases the problem is simply expressed by taking accelerations along the tangent and normal, whereas in others we take accelerations parallel to the axes. Again for terrestrial observations and experiments a reference frame attached to the earth as a rigid body is most suitable. But when we consider the motions of the stars and planets, with a system of reference attached to the earth as a rigid body the paths become such a complicated system of "excentrics and epicycles" that we are compelled to consider whether another will not do better. We then drift on to the Copernican system in which the sun is the rigid body of reference, and find that the planets move in very simple curves, *viz.* circles round the sun which in the next step of approximation turn out to be slightly elliptic.

Again consider the question of time. Let me here make a preliminary remark. Time and space are connected with each other through motion. For in the above consideration we measure time with the rotating earth as time-keeper. When we say that it is noon at Bangalore, we mean that the meridian of the place is just opposite to the sun. When we say that it is 2 p.m. there, we mean that the meridian has rotated through 30 degrees or it is 30 degrees to the east of that which is opposite to the sun. Thus we experience different conditions of heat and cold, different positions of bodies, etc., we find everything in motion (changing) and it is this that produces on our minds the sensation of time.<sup>1</sup> If everything in the universe were still, I imagine that the conception of time would be absent, *e.g.* if the sun were a fixed body in the atmosphere of the earth as the earth is in that of the moon.

And it is one of the cardinal points of the Relativity Theory that space and time are not independent of each other but are related to one another through the motion of the observer.

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<sup>1</sup> Thus it is manifest that the science of mechanics does not describe the motion of bodies in its quantitative dependence upon time, flowing at a constant rate (Newton) but literally gives only sets of simultaneous states of motion of the various bodies, the time-keeper itself being included."—SILBERSTEIN.

• These considerations show that by "equal intervals of time" we mean those in which a body not acted upon by external forces describes equal paths. When we say that the motion of a body is uniform we merely define equal intervals of time.<sup>1</sup> If with a certain reference frame and clock, we obtain a particular simple expression for a physical law, we cannot expect the same simple expression to hold when we change the co-ordinate system and retain the same clock. But it is possible that with a different time-keeper we may obtain a similar simple expression. Thus *the choice of the axes of co-ordinates to a certain extent must be made along with a time-keeper, mathematically  $x, y, z$ , and must be selected as one whole, and we are led to conclude that the form and the degree of simplicity of the statement of a physical law depend essentially on the selection of the frame of reference.*

#### 4. THE AETHER AND THE NEWTONIAN FRAME.

Newton enunciated the universal law of gravitation according to which every body attracts every other with a force directly as the product of their masses and inversely as the square of their distance apart. This was found to agree very closely with facts, for by calculations based upon this law, it was possible to predict the positions of heavenly bodies with an accuracy never thought of before. Natural philosophers however were not willing to admit the possibility of "action at a distance"; they argued that if A exerts a force on B, the force must be communicated to B through some material medium. How can the action be instantaneously communicated to a distant body?<sup>2</sup>

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<sup>1</sup> "Two material points left to themselves move in such a way that equal lengths of path of one correspond to equal lengths of path of the other" defining on this principle "equal intervals of time as such within which a point left to itself traverses equal lengths of path."—NEWMAN quoted by FREUNDLICH. *Foundations of the Theory of Relativity*.

<sup>2</sup> Newman drastically criticises the law thus:—

"Let us suppose an explorer to narrate to us his experiences in yonder mysterious ocean. He had succeeded in gaining access to it, and a remarkable sight had greeted his eyes. In the middle of the sea he had observed two floating icebergs, a larger and a smaller one, at a considerable distance from one another. Out of the interior of the larger one, a voice had resounded issuing the following command in a peremptory tone. 'Ten feet nearer.' The little iceberg had immediately carried out the order, approaching ten feet nearer the larger one. Again, the larger gave out the order. 'Six feet nearer.' The other had again immediately executed it. And in this manner order after order had echoed out, and the little iceberg had continually been in motion, eager to put every command immediately and implicitly into action.

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"These commands are certainly given just as silently as they are obeyed; and

Scientists therefore enunciated two fundamental postulates which all physical laws must satisfy :—(i) *Principle of continuity*. The physical state at a point must be capable of being completely determined by that of the neighbouring points. Force can be transmitted only through contact. Action cannot be instantaneously communicated to a distant body. (ii) *Principle of causality*. We should attribute a relation between two events as cause and effect only if the relation can be observed. We observe only the motions of bodies relative to one another, hence absolute motion is meaningless. This principle is again a cardinal point of the Einstein theory and shows how it is not any metaphysical theory, but is based on the necessity of reconciling theory and observation.<sup>1</sup>

A question naturally arose : is Newton's law of gravitation which had fitted with facts to a remarkable degree of accuracy to be abandoned, or the first postulate, which was an earnest demand of the mind in its endeavour to comprehend the universe, to be regarded as an unnecessary hypothesis? Both had to be retained and reconciled with each other. Hence arose the hypothesis of the aether.

According to this hypothesis, the whole of space is pervaded by an invisible stationary medium called the aether. Force has its seat in this medium ; the force which one body exerts on another is communicated with the help of this medium. Light consists of waves in the aether. Electric and magnetic forces have their seat in the aether. In short any phenomenon which was observed and which required a medium was given the aether and it was supposed that the aether "pervades the substance of all material bodies with little or no resistance, as freely perhaps as the wind passes through a grove of trees" (quoted by Dr. Silberstein in the *Theory of Relativity*, p. 35) and by "stationary" it was meant that the several parts of the aether do not move relatively to one another. Once the hypothesis was accepted, scientists argued that a body at rest with respect to this medium may be said to possess absolute rest. A body in motion with respect to it has absolute motion.

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Newton has denominated this play or interchange between commanding and obeying by another name. He talks quite briefly of a mutual attractive force, which exists between cosmic bodies. But the fact remains the same. For this mutual influence consists in one dealing out orders, and the other obeying them."

<sup>1</sup> " Prof. Einstein pointed out that the theory of relativity was not of any speculative origin, but had its origin solely in the endeavour to adapt the theory of physics to facts observed. It must not be considered as an arbitrary act, but rather as the result of observations of facts, that the conceptions of space, time and motion hitherto held as a fundamental, had now been abandoned,"—Report of Einstein's lecture at King's College, London, published in *The Hindu*, July 14th, 1921.

It is well known that the fundamental law of mechanics, *viz.* the law of inertia, states that a body continues in its state of rest or uniform motion in a straight line if it is so far removed from other bodies as not to be influenced by them. The fixed stars are so far removed from each other that this law of inertia holds true for them to a very high degree of approximation. For a reference frame attached to the earth a fixed star describes a circle of immense radius and therefore contradicts the law of inertia. Adhering to this law, a frame of reference which is such that the law of inertia holds true with respect to it, is called an inertial (or Newtonian) frame.

### 5. THE CONTRACTION HYPOTHESIS.

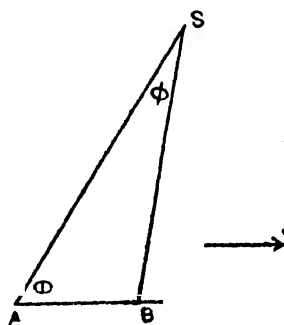
On a quarter sheet of paper, two tiny ants are moving. Lo! they talk, and separate. They meet again. Imagine them invested with the capacity of thought similar to our own. As they move about, A observes B and *vice versa*. A forms a certain judgment about B's motion and *vice versa*. Now if you move the sheet of paper with any given velocity, is the judgment of A with regard to B's motion altered? The creatures fix their orientation with respect to the sheet of paper (as the rigid body of reference), and the answer to the question is a decided "No." A's judgment of B's motion cannot be affected by moving the sheet with any given velocity. Similarly with B. This is a simple example of the principle of relative motion, which states that *the relative position and motion of two bodies (i.e. the motion and position of one as judged from the other) are not affected by imposing any the same velocity on both of them.*

One immediate consequence is the theorem of addition of velocities of classical mechanics. Suppose A moves in a straight line from a point O with velocity  $u$ , and B with velocity  $v$  in the opposite direction, so that relative to B, O has a velocity  $v$  in the same direction as A. Now obviously the distance AB is increasing at the rate  $u+v$ , so that we may state generally:—If A moves with velocity  $u$  relative to O, and O with velocity  $v$  relative to B, then A moves with velocity  $u+v$  relative to B (all velocities being in the same straight line).

A problem of great importance in the evolution of the Theory of Relativity and closely connected with the above is *the effect of the motion of a source of light on its velocity of propagation*. Let P be a moving source in the atmosphere of the earth, and let an observer at rest measure the velocity of light waves emitted by P. What is the effect of P's motion in the atmosphere on the velocity of propagation of light in air as observed by the man at rest? Or again, if light waves

are propagated through water, does it make a difference in the observed velocity of propagation through it, if the water flows instead of being at rest? In other words, the problem is to find the effect, on the velocity of propagation of light, of the velocity of the source in the medium (such as air or water) through which it propagates it, as seen by an observer at rest in the medium; or the effect of the relative velocity of the observer and his frame of reference with respect to the source.

The problem can be made clear by pointing out the connection in which it arose. Let A be an observer on the earth sharing in its velocity  $v$  in the direction of the arrow, and S a fixed star which sends out light. Light takes time to travel from S to the earth, during which the observer moves from A to B so that instead of being seen in its real direction AS ( $\because$  S is a fixed star), the observer sees it in the direction BS which makes an angle ASB with its real direction. We have  $SB = ct$ ,  $AB = vt$ , where  $c$  is the velocity of light and  $t$  the mean time taken by light to travel from the star to the earth.  $\theta$  is the real direction of the star, and  $\phi$  the displacement of this direction owing to the earth's motion (called also aberration) and we have from a simple property of the triangle,



$$\frac{\sin \phi}{\sin \theta} = \frac{v}{c}$$

It is obvious that this explanation is based on the assumption that the light waves coming from the star do not share in the motion of the earth's atmosphere and hence also of the telescope through which the star is observed. Or to put it in plainer language, it is assumed that the velocity of the medium in which light travels (here air) has no effect on the velocity of the light. Now suppose you observe the star through a water telescope. Let  $n$  be the refractive index of water. This is different from unity, and the velocity of propagation of light in water is  $\frac{c}{n}$  where  $c$  is the velocity in vacuum or air (refractive index unity). On the above hypothesis, viz. that the velocity of the medium has no effect, the aberration  $\phi'$  should be different from  $\phi$ . Experiment shows that  $\phi'$  is the same as  $\phi$ . More generally, light from a star is found to behave in the case of glass and other optically denser media in exactly the same way as if the star is displaced through  $\phi$  and the earth is at rest relative to the star. Hence we conclude that the velocity of the body

through which light is propagated has some effect. What is the effect?

If a fraction  $k$  of the relative velocity  $v$  of the source with respect to the medium is impressed,  $k$  is termed Fresnel's dragging coefficient and it has been proved that for light waves  $k = 1 - \frac{1}{n^2}$  where  $n$  is the refractive index of the medium. To obtain this value of  $k$ , "Fresnel supposed that the excess and only the excess of the aether contained in any ponderable body over that in an equal volume of free space is carried along with the full velocity  $v$  of the body; while the rest of the aether within the space occupied by the body, like the whole of the free aether outside, is stationary, with respect to the fixed stars, of course. This amounts to supposing that the velocity of propagation of the light waves is augmented only by the velocity of the centre of gravity of the whole mass of the aether contained in the body."<sup>1</sup> The truth of this celebrated formula was verified by Fizeau (1851) and by Michelson and Morley (1886). Lorentz on the assumption of a stationary aether constructed his Electron Theory according to which, to a first order of small quantities (i.e. as far as terms containing  $\beta = \frac{v}{c}$ , ( $v$  is the velocity of the observer, and  $c$  of light) he finds very nearly Fresnel's value, viz.  $1 - \frac{1}{n^2}$  for the dragging coefficient but shows that there is a second order influence (i.e. a  $\beta^2$  term). That the second order influence exists was first suggested by Maxwell.

The case of sound which is also transmitted by wave motion is entirely different. The waves are entirely dragged by the medium, say air or water with its full velocity;  $k$  is always unity. The problem is one of pure relative velocity. *For sound the velocity with regard to the medium is always the same.*

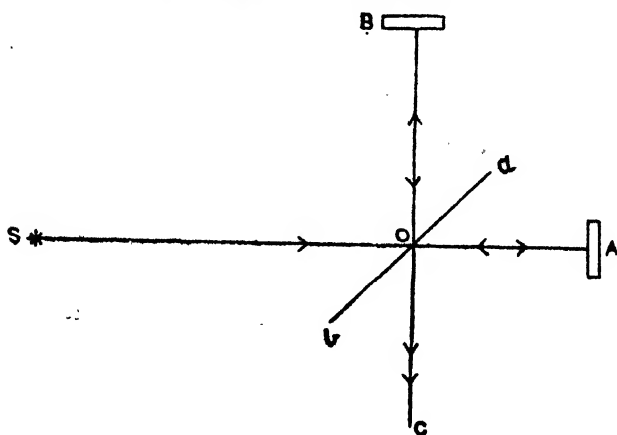
In the case of light, for a vacuum or air,  $n=1$ , and  $k=0$ , i.e. *the velocity of the source, has no effect at all on the velocity of light; whatever the motion of the observer or the source, the velocity of light in relation to the observer is always the same. Every observer, whatever the system to which he belongs, finds the same value  $3 \cdot 10^{10}$  cms. per second for the velocity of light.*<sup>2</sup> Let us consider the consequence of this fact. There are two theories on which scientists attempted the explanation of the propagation of light:—(1) the undulatory theory according to which light was a system of waves in the aether, (2) the corpuscular theory accord-

<sup>1</sup> Quoted from Silberstein, p. 37.

<sup>2</sup> "The velocity of light in all directions is the same, whatever the motion of the observer"—JEANS.

ing to which light consisted in some way of particles projected from the source. If a source emitted light waves from a point P in the aether, after a certain interval, the wave would form a sphere having P as centre. If in the meantime the luminous point moves from P to Q in the aether, the wave front will not have P as centre. It will be an excentric sphere whose centre varies. Similarly on the corpuscular theory. Hence if these theories of the nature of light are true, experiment must reveal the velocity of P in the aether, i.e., we shall be able to find out the velocity of the earth in the aether. But it is found that both the results are wrong; that P is always the centre of the sphere. This is the exact significance of the Michelson and Morley experiment described below. Whatever the motion of the observer perceiving the light in the supposed aether, the velocity of light is always found by that observer to be the same<sup>1</sup>. This was taken as a hypothesis by Einstein, viz.,—“*Light in a vacuum has a definite and constant velocity, independent of the velocity of its source.*” Now it is an experimental fact and the consequences of this is worked out in the theory of relativity.

But Lorentz's equations indicated a *second order influence of the velocity of the source on that of light*. This was not in accord with experiments conducted by Michelson and Morley in 1886. For the earth is in motion in the aether, and it was hoped to detect this motion of the earth with the help of experiments on light. In its annual round, the direction of



its velocity with respect to the aether (which should take into consideration also the velocity of 25 kilometres per second of the solar system towards the constellation Hercules) changes continuously, and at some

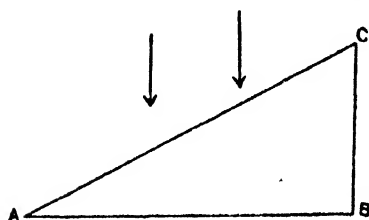
<sup>1</sup> No matter what the velocity of the observer is, the light surface, as observed by that observer, is invariably a sphere having that observer as centre,—JEANS.

time the direction of the velocity of light must coincide with that of the earth in the aether. To detect this motion, Michelson and Morley performed the following experiment<sup>1</sup> :—

The rays of light proceeding from the source S are made parallel and divided into two beams by the half silvered plate  $ab$  inclined at  $45^\circ$  to OA. At A and B are placed mirrors perpendicular to Oa, Ob and such that  $Oa=Ob$ . After being reflected at A and B they return to the central mirror  $ab$  and a part of the first beam is reflected along Oc, and of the second transmitted in the same direction. These produce with one another a system of interference fringes which can be observed through a telescope placed in the line OC. If OA is in the line of motion of the earth (which can be secured by rotating the whole apparatus through various angles) through the aether, and the motion of S has the effect on the velocity of light given by Lorentz's second order effect the time for OAAO will be different from that for OBBO, and this will produce a shift of the interference bands which was not observed.<sup>2</sup> To account for this negative result, Lorentz invented a peculiar hypothesis now widely known as the *contraction hypothesis*. It consists in assuming that "the dimensions of a solid body undergo slight changes, of the order  $\beta^2$  ( $\beta = \frac{v}{c}$ ,  $v$  is the velocity of the body in the aether, and  $c$  of light) when it moves through the aether," i.e., if  $OA_l$  and  $OA_t$  be the distances OA when it is in and perpendicular to the direction of the

<sup>1</sup> Silberstein, pp. 73-79.

<sup>2</sup> This can be more clearly understood from the following example. Suppose



AB is the transverse section of a river flowing with velocity  $u$ . Suppose a man swims with velocity  $v$ . To cross the stream and back, the time taken is twice the time to C; he aims at C, and is drifted down to B. The time is

$$\frac{2AB}{\sqrt{v^2 - u^2}} = \frac{2AB}{v\sqrt{1 - \frac{u^2}{v^2}}}.$$

To go up stream a distance  $AB_1$  and back, the time he takes is

$$\frac{AB}{v-u} + \frac{AB}{v+u} = \frac{2AB}{v\left(1 - \frac{u^2}{v^2}\right)}.$$

Of course  $v$  should be greater than  $u$ , and since  $1 - \frac{u^2}{v^2}$  is a proper fraction (less than unity),  $\sqrt{1 - \frac{u^2}{v^2}} > 1 - \frac{u^2}{v^2}$ , i.e. time across stream and back is less than time up stream and back the same distance AB. If the times are equal, the distances cannot be so, and the distance  $AB_1$  up stream is given by  $AB_1 = AB \sqrt{1 - \frac{u^2}{v^2}}$  which is the relation between  $L_s$  and  $L_r$ .



motion through the aether, then  $OA_l = OA_t \sqrt{1-\beta^2}$ . Thus assuming the stationary aether theory, we are required by experiment to consider the ratio of the lengths of one and the same material segment OA or shortly L in those two orientations as being equal to  $\sqrt{1-\beta^2}$ , i.e.  $L_l : L_t = \sqrt{1-\beta^2}$ . Lorentz's attitude towards this hypothesis is thus quoted by Silberstein:—"The hypothesis certainly looks rather startling at first sight, but we can scarcely escape from it, so long as we persist in regarding the aether as immovable. We may, I think, even go so far as to say that on this assumption Michelson's experiment proves the changes of dimension in question, and that the conclusion is no less legitimate than the inferences concerning the dilatation by heat or the changes of the refractive index that have been drawn in many other cases from the observed positions of interference bands."

## 6. THE SPECIAL PRINCIPLE OF RELATIVITY.

We defined an inertial frame as a system of reference with respect to which the law of inertia is true. Newton established that with reference to such a frame A ( $x, y, z$ ) the motion of any body is embodied in the equation:—

Mass  $\times$  Acceleration in any direction = Total force acting on the mass in the same direction.

This shows that the cause of acceleration is force, and where there is acceleration (i.e. a change of velocity) there is always acting an external force. Suppose we take another system of reference B ( $x', y', z'$ ) having relative to A a uniform motion of translation in a straight line, i.e. B has constant velocities  $u, v, w$  parallel to the axes with respect to A. With reference to B, by the principle of relative velocity, the accelerations of a particle remain the same as with reference to A. The forces also remain the same, and hence also the equations of motion. For the mathematical statement of mechanical laws, (which is the above equation of motion), the system of reference B is as good as A, i.e. they are equivalent. This is the *mechanical principle of relativity* which may be stated—

*All systems of reference in uniform rectilinear motion of translation with respect to one another are equivalent for the mathematical statement of the general laws of mechanics.*<sup>1</sup>

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<sup>1</sup> Einstein states thus—"If K is a Galileian co-ordinate system, then every other co-ordinate system K' is a Galileian one, when, in relation to K, it is in a condition of uniform motion of translation. Relatively to K, the mechanical laws of Galilei-Newton hold good exactly as they do with respect to K."

Note an important consequence of this principle. An observer of the system B writes down certain equations of motion of particles which remain the same whether B is at rest or has a motion of uniform translation in a straight line. No experiment conducted within the system can reveal its uniform motion. This result may be expressed thus:—“*By no mechanical experiment conducted on his own system can an observer detect the unaccelerated motion of his system.*” This is fully confirmed by experiment. It is illustrated by the familiar difficulty we experience in determining whether a train in which we sit is in motion or the adjacent one. To determine it, we wait for bumps (i.e., accelerations) or else look at the fixed surrounding objects (such as the station buildings or trees) i.e., perform an experiment on an object outside the system.

This principle of relativity certainly holds good with great accuracy in the domain of mechanics. A question naturally arises, can a principle of such broad generality as the equivalence of systems in uniform motion with respect to one another apply with great exactness in one domain of natural phenomena and not in another? Following Einstein, we may put a second question. If this principle does not apply to other domains of natural phenomena, then for the description of physical laws other than those of mechanics, of various systems in uniform motion with respect to one another, some one must be privileged in the sense that with reference to that system natural laws assume a simple form. We should then be justified in saying that this system is absolutely at rest and others are in motion with respect to it. In the enunciation of laws with respect to A, the velocity of A with reference to the privileged system must play a part. Now the earth is in motion round the sun and its velocity changes its direction every moment. It cannot therefore be always at rest with respect to the privileged system. But even the most careful observations do not reveal any influence of its velocity on physical laws. We therefore conclude that the principle of the equivalence of systems in uniform motion with respect to one another must hold true in all domains of physics. This is the special principle of Relativity which runs thus in Einstein's own words “*If relative to K, K' is a uniformly moving co-ordinate system devoid of rotation, then natural phenomena run their course with respect to K' according to exactly the same general laws as with respect to K.*”<sup>1</sup>

But a question immediately arises. Is this consistent with the principle of relative velocity? Take a simple example—the velocity of

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<sup>1</sup> “It is impossible by any experiment to detect uniform motion relative to the æther.”—EDDINGTON.

propagation of light. A man on a moving train finds that it travels with a velocity  $v$  in the direction of the train's motion. If  $u$  is the velocity of the train, a man on the stationary road should find its velocity to be  $v-u$ . This is in accord with the principle of relative velocity. But like every other general law of nature, the law of propagation of light in vacuo must be the same for all observers. This is from the special principle of relativity, and we have already seen from the Michelson-Morley experiment that this is the case. Are we then to reject the principle of relativity which appeals so strongly to our reason, or are we to reject the researches of Lorentz and the experimental evidence in favour of the constancy of the velocity of light? If the two are to be reconciled, we must conclude that there is something wrong with our fundamentals. The measuring apparatus of the observers must be different. And this is exactly what Einstein has shown. "*As a result of the analysis of the physical conceptions of time and space it became evident that in reality there is not the least incompatibility between the principle of relativity and the law of propagation of light and by systematically holding fast to both these laws a logically rigid theory can be arrived at.*" This is called the *special theory of Relativity*.

C. KRISHNAMACHAR.

## THE VEDAS AND SCIENCE.\*

NONE among the literary productions of the day can possibly be more suprisingly speculative than Mr. P. N. Goud's Message of the XXth Century: "*The Vedas are treatises on the Exact Sciences*"! The one pertinent question that may justly be put to the author is whether the *Vedas* are scientific manuals to *him alone* or to all those who have had and still have something to do with the *Vedas*. Commencing with the Vedic poets, whose fervent and earnest religious utterances they are, and passing on, through the Srauta writers on the liturgy of the Vedic rituals, the Nirukta of Yaska, the thousand discourses of Jaimini on the doubtful liturgical points of the Vedic sacrifices, to Sayana, the latest Commentator, the *Vedas* are not merely regarded as sacrificial text books, but are still made use of in the new moon, full moon, Soma and other Vedic sacrifices, which, in spite of the dying faith in them, are still being performed here and there even in modern India. Would not the living Brahman Somayajins or Soma sacrificers, who still believe, in spite of the sweeping changes wrought on their customs by time, that they are the true inheritors of the ancient Vedic tradition as expounded in the numberless commentaries mentioned above, look aghast at the novel message of Mr. Goud? And would not they fill their Soma cups with acetic acid and drink it as Soma juice instead of the juice of a plant substituted for the real Soma plant? Would they believe, contrary to the spirit of the liturgic works, that their *Agni* is not the fire generated by fire-drill, but oxygen manufactured by any one of the numerous chemical processes detailed in our modern chemical treatises?

The author calls his method of Vedic interpretation scientific. But his interpretation of the word *Agni* as Oxygen, of *Antariksha* as Nitrogen, and of *Dyauh* as Hydrogen does not seem to be scientific. There is nothing in the words themselves, or in the supposed roots from which the author believes them to be derived, to indicate the properties of Oxygen, Nitrogen and Hydrogen.

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\* *Introduction to the Message of the Twentieth Century*. Containing a new method for the systematic interpretation of the *Vedas*, and experimental data proving that the *Vedas* are treatises on the exact sciences. By PANYAM NARAYANA GOUD, M.A., B.Sc. (Edin.). Printed at the Bangalore Press, Mysore Road, Bangalore City.

*Agni* as meaning oxygen does not come under any one of the three classes of words, *Yaugika*, etymological, *Rudhi*, conventional, and *Yogarudha*, both etymological and conventional. According to Sanskrit grammarians, *Agni* is a *Rudha* word meaning of fire. According to Jaimini and his commentators (I. 3,30), words in the *Vedas* have the same meaning that they convey in secular literature. Hence *Agni* and other common nouns in the *Vedas* must have the same conventional meaning that is assigned to them in popular language. There are also a number of words in the *Vedas* which are used in their derivative sense. So Mr. Goud is entirely wrong in saying (p. 31) that "the Vedic terminology is all *Yaugika*." He has quite misunderstood what he has quoted from the *Mahabhashya* in support of his opinion. What Patanjali says is that according to the followers of Yaska and Sakatayana all nouns are derived from roots, and that Vedic words and words in usage are all acceptable as good words (but not vulgar or slang words). Patanjali's own view on this question is that, in cases of words whose derivation is not clearly known, roots may be guessed if suffixes are known and suffixes guessed if roots are known. He should not be taken to mean that as a general rule words have their derivative sense.

Even granting, for the sake of argument, that Vedic words have their etymological sense, how does it help the author? No etymological subtlety can make *Agni* mean Oxygen and *Dyauh* Hydrogen. The word *Agni* is usually derived from root *ag*, to go, and *Dyauh* from *div*, to play or shine. Likewise the word *Yagna* is derived from *yaj*, to worship, combine, or give. If in virtue of movement *Agni* be taken to mean Oxygen, for the same reason why should it not be taken to mean a Railway Engine, or a Motor Car, or an Aeroplane, or a Bombshell, or what not?

Now taking the word *Agni* to mean Oxygen and *Yagna* Chemical Action and *Deva* a Re-agent, Mr. Goud translates the first verse of the *Rigveda* as follows:—

"I praise (i.e. describe the properties of) *Agni*, the element that is reckoned above all the re-agents taking part in oxydizing experiments, which performs the functions attributed to *Hotri* and which is the greatest bestower of wealth."

The words of the original with their English equivalents are, however, as follows:—

*Agnim*, the fire, *ile*, I praise, *purohitam*, kept before (as a priest), *yagnasya devam*, the deity of sacrifice, *ritvijam*, the seasonal sacrificer, *hotaram*, the *Hotri* priest, calling upon the gods, *ratnadhatamam*, the best

wealth giver. The meaning is—"I praise *Agni*, who like a priest is kept before me, who is the deity of sacrifice, who is a minister in seasonal sacrifices, who like the *Hotri* priest calls upon the gods, and who is the best wealth giver."

Now if we are at liberty to take the words in their etymological sense, following Mr. Goud's, "message," we may as well interpret *Agni* to mean a Railway Engine and *Yagna*, Traffic, and translate the verse to please our own whim as follows :—

"I praise the Railway Engine, which is kept in front, which is the deity of traffic which is the seasonal or periodical supplier, which calls by its shrill noise, and which is the best wealth giver."

If scholars or historians say that this interpretation is against history, then *Agni* may be taken to mean the first car at the head of a line of cars carrying grains to markets. Accordingly the Vedic priests may be described to have been either engine drivers, car drivers, or oxygen manufacturers, or anything that fancy may suggest.

As a safeguard against falling into such absurdities, it is therefore highly necessary to take into consideration the customs, the tradition, the myths, the grammars, the dictionaries, and the commentaries current among the people themselves before proceeding to interpret their ancient literary relics or epigraphical records. Mr. Goud has done nothing of this sort. Nor has he taken into account the literature of the Iranians, the acknowledged contemporaries of the Vedic Aryans. According to them Indra is not a *Deva*, Mr. Goud's electric energy, but a *Daeva*, a Demon, and *Yagna* is *Yasna*, a Sacrificial Act, and not "the activity of a chemist with his Bunsen flame in a chemical laboratory." With all due respect to Mr. Goud's Sanskrit learning, it must be said that he is not a correct interpreter of Sanskrit. While explaining Sayana's own definition of *Yaga*, sacrifice, (p. 126) he says that "he (Sayana) is not sure of its real significance." To speak the truth, Sayana was surer of what his own expression signified to him and to his hearers and readers than Mr. Goud of the significance of his own Message of the Twentieth Century.

R. SHAMA SASTRY.

## INDIAN ART. (I)

"I too will something make,  
And joy in the making."—*Bridges*.

BEFORE entering upon the narrative of the development of the Indian arts and their greatness, one may make a few introductory remarks about art in general which are essential to the right understanding of what is to follow. Nothing is more common than the emphatic contrast between Art and Nature. Many men of note have understood by Art everything outside the pale of what they call Nature. Nature and Art, according to them, together make up the grand conception of the Universe. Pope, for example, maintains this differentiation in his line

"Blest with each grace of Nature and of Art."

"Nature" in accordance with this way of thinking is restricted to such things as we do not originate but find; while Art would include all things that man originates. Art is *Homo additus Naturae*. According to others all phenomena are equally natural. Nature includes all powers existing in the outer and the inner world, and everything existing by means of those powers. This was Shakespeare's thought when he wrote the lines

"Nature is made better by no mean  
But nature makes that mean; so over that art  
Which, you say, adds to Nature is an art  
That Nature makes."

Here Art is part of Nature. John Stuart Mill writes in one of his papers—"Nature is a collective term for all facts actual or possible." Art is the employment of the potentialities of Nature in the achievement of an end. "The united powers of the whole human race," he says elsewhere, "could not create a new property of matter in general or in any one of its species." Art, we may say, now becomes submerged in Nature. A complementary conception has its foundations in an analogy which the operations of man bear to the operation of forces external to man. Sir Thomas Browne in his *Religio Medici* declares that all things are artificial, for "Nature is the Art of God." It is the *proprium* of Art to create and beget, and therefore Nature is herself an artist.—"Art," says Dr. Johnson in his Dictionary, "is the power of doing something

not taught by Nature or instinct." This definition is obviously insufficient. Art is not only the power of doing something but the exercise of that power, not only the exercise of the power but the rules according to which it must be exercised, not only these rules but also the net result of such an effort.

We should next differentiate Art from Science. Here too we may resort to one of Mill's pregnant sayings: he declares that Science is indicative, while Art is imperative. Science teaches us to know without any of the use to which the knowledge must be put, while Art, though to a great extent assuming the scientific truths, teaches us to do a particular thing in a particular way.

There is yet one more distinction to be made in this connection; that is, between the Fine Arts (which are the subject matter of this essay) and the Mechanical Arts. We may sum up this much-discussed distinction by saying that the Fine Arts are contrivances for the enjoyment of man, while the Mechanical Arts minister to his needs. Architecture is a Fine Art, for example; while building is a Mechanical one. For anything to be a piece of good art, it should, through the urge of free individual will and inventive genius, bring out the external expression of an ideal. Perfection is the supreme goal to be attained by the Fine Arts. It will not be far wrong to define Art as the perfect expression of a perfect mind.

It is necessary at this stage to get at some essentials that enter into the conception of Indian Art in its inmost aspects. To the Indian religion is not only a phase of life, but life itself. It is the perennial springs of religion that support and vitalize Art in India. Without the inspiration derived at the fountain-head of religion, Art in India would wither away as a flower plucked from the plant. In India Art is ever subordinate to religion, ever grafted on devotion. To Indian artists all Art is the revelation of Visvakarma, the divine Artist. They look to him for inspiration. This idea of the divine manifestation through Art is beautifully brought out by Tagore in the lines:

"My poet, is it thy desire to see thy creation through my eyes and to stand at the portal of my ears, silently to listen to thine own eternal harmony?"

This fact must be borne in mind, as it serves to explain the inner nature of artistic impulse in India.

Sir George Birdwood has stated that the Fine Arts do not exist in India. "The senseless similitude," he says, speaking of the Java Buddha, "by its immemorial fixed pose is nothing more than an uninspired brazen image, vacuously squinting down its nose to the thumbs



and knees. A boiled pudding would serve equally well as the symbol of passionate purity and serenity of soul." Such language hardly becomes a fair-minded critic of art. One of the finest products of Indian intellect cannot be so futile as to deserve such denunciation, unless indeed the living forces of religion are a negligible factor in the best works of art. Let us turn to Dr. Anderson for his view on Indian Sculpture. "It usually consists," he says, "of monstrous combinations of human and brute forms, repulsive from their ugliness and outrageous defiance of rule and even possibility." Whence does this misconception arise? Surely if Dr. Anderson had realized how the Indian can transcend the limitations of beauty of form, and think of the ideal as the only true beauty, he would have spoken differently of Indian sculptural art. Or take again the implacable Mr. William Archer, who was more frightened than impressed at the sight of the towers of the Madura temples, making all manner of silly conjectures about them. But such dogmatism and prejudice cannot stand against the reasoning of fair-minded art critics like Messrs. E. B. Havell, V. A. Smith, Marshall, J. H. Cousins, and Gongooly, and Dr. Ananda Coomaraswamy. The cloud of illusion is clearing away, and Indian Art has been receiving its due recognition in exhibitions in Berlin, Paris, London and New York. The old wave of irrational denunciation has spent itself, and there is now in all quarters a spirit of frank appreciation. More and more attention is being given to the development of artistic taste, and the Government, in addition to encouraging the revival of the arts, has done much in the way of restoring the decaying treasures of art.

To start with, the term "Indian" is ambiguous. Only the Hindu, the Buddhistic and the Jain art can be considered as indigenous to the Indian soil, while of the Mohammadan and Moghul art I shall only say with Mr. V. A. Smith that they are no more Indian than is the Government House at Calcutta. But when I say this let me not be understood to disparage Moslem art, for which I have unbounded admiration.

Following Mr. Worsfold's classification of the arts, we shall take up one by one the arts of the eye and proceed then to a consideration of the arts of the ear.

#### ARCHITECTURE.

Architecture, depending upon the manipulation of coarse materials like brick, stone and wood for the attainment of beauty, ranks lowest in the scale of arts. The architect cannot depict either life or movement, and the net product of his genius differs so little from natural objects that unless the work turned out be superb it

will fail to produce any impression on the mind. Yet though the work of the architect is real in the sense that it is not easily distinguishable from objects in nature, it is reality presented in its mental aspect. What does the lofty and picturesque tower of a temple indicate? It represents the human soul, in its seven stages, surrounded by multifarious demonic passions, aspiring to rise higher and reach Heaven. Take the numerous carvings of lotus-flowers throughout the length and breadth of India. What is it that the artist tries to express? He wants to depict life by means of the lotus, comparing the wide stretch of waters on which the flower blooms and fades to the eternity of existence. But for this beautiful symbolism the lotus-flower would be a meaningless superfluity, and out of place in a well-ordered artistic scheme.

Vitruvius has said that architecture must have three qualities—stability, utility and beauty. From our standpoint the last named is of supreme importance. Size, harmony, proportion, symmetry, ornament and lastly colour are the several elements that make for beauty in architecture. The Pyramids, the Sphinx, the columns at Karnak, the temple of Edfu and the Parthenon by their very immensity of size produce in their beholders feelings of awe and a deep sense of the majesty of human power. Any measurement taken at random cannot please the eye, and proportion, which is the employment of mathematical ratios, is a great factor in architecture. Harmony is the general balancing of the several parts of the design. It is really proportion narrowed down in its application to the mutual relation of the details. When not carried too far, symmetry, which is uniformity in plan enhances the general perfection of the fabric. Even rigorous symmetry, when appropriately combined with diversity of detail, is sure to be highly effective. Ornament is the finishing touch which heightens the general effect unless the harmony of the structure is marred by a lavish use of it. Paucity of ornamental detail will affect adversely the beauty of the structure. The architect may employ various colours to enhance the general impressiveness of the fabric, but there is always the danger that an indiscreet use of them for architectural purposes may make the edifice unnaturally gaudy and repulsive. With these general ideas about architecture we may embark upon a description of Indian architecture as it was in the past and as it is to-day.

Megasthenes describes the splendid imperial palaces and other notable buildings at Pataliputra in the time of Chandragupta Maurya, and asserts that they excelled in beauty and splendour the edifices at Susa and Ecbatana. But no trace of them exists to-day. Almost all buildings to which we can get access to-day are works of mature genius and

skill. From these two facts it has been inferred that much of the earlier production of art must have been in wood or brick, as a result of which the buildings have failed to survive the ravages of time. Asoka replaced all wooden and some brick-built buildings by buildings of stone throughout his vast empire, with such rapidity that the people of his time felt constrained to believe that it was the work of no human agency, but of spirits working out Asoka's imperial will. No extant work of Indian architecture, in fact of any other Fine Art, can be assigned to an earlier period than Asoka's reign. Asoka's conversion to Buddhism resulted in a vast number of stupas and monasteries being built all over his empire. Jains also are said to have built stupas later, but no trace of them is to be found to-day. At first built in a plain, simple fashion, the stupas later became more and more ornate. They gradually became great schools of art too. Devout followers of Buddha began to lavish their decorative powers on these early strongholds of Buddhism. The Stupa at Sanchi (now restored) with its elaborately sculptured railings is a precious legacy of early Buddhism. Evidences are available to prove that some of the Asokan stupas and dagabas of Ceylon reached a height of 200 to 400 feet. "Curved roof," says Fergusson, "on the whole rare in other parts of the world, is very common in India." It is indeed the soul of early Indian architecture. The domical structure of the stupa has been accounted for in various ways. The strongest evidence points to the probability for the imitation of the plastic bamboo roofs, everywhere preceding stone and brick building in India. The chaitya halls, as Fergusson calls the Buddhistic churches, occur near Nasik and Gaya. Asoka erected many pillars, surmounted by excellent images, many of which have survived to our own days without any defacement. The Lauriya Nandangarh monument is the most graceful of all Asokan columns. There is a Jain pillar near Mangalore which preserves Mr. Walhouse's praise for stately grace and richness of ornament. With the downfall of the Mauryan dynasty the glory of the Buddhistic architecture began to fade.

The rejuvenation of Hinduism, synchronising with the decline of Buddhism, gave a fresh impetus to the erection of temples consecrated to Hindu gods all over the country. A multitude of religious monuments sprang magically into being at the touch of a reviving religion. In the multiplicity of the crowded varieties two distinct styles of architecture are at once perceivable. They are the Aryavarcha or the Indo-Aryan style, and the Dravidian or South-Indian style. It may be relevant to note here that style in architecture is very little modified by differences in creed, but is a distinct result of time and place. We can

never say that any building is constructed after the Jain fashion or the Buddhistic fashion, though religious requirements may influence to a small extent the inner arrangement of the buildings. If a temple of Vishnu had been built in Gujerat during the time when the temples on Mount Abu were constructed, it would have been after the same fashion as the Jain busthis of those times. Style in architecture, like style in literature, is largely the product of time and place, reflecting the national life of the period in which it is predominant.

The Indo-Aryan style takes the procession car or ratha as its model, its steeples bulging with vertical ribs meeting at the highest point. At Bhuvaneswar in Orissa a number of temples built on this model are found. Among the best are the Mukteswara temple (the great temple with a fabulous fund of sculptural wealth), and the charming Raja-Rani temple. The Karnak Sun temple, and the Kajuraho temple with steeples nearly 100 feet high, are very fine examples of this variety of architectural design. The Bengal type of temple, fashioned after the bamboo huts, consists of a peculiar arrangement of curvilinear steeples, the details being mostly Mohammadan. The tendency in Northern India to replace the curving domes and exquisite steeples of old by the new-fangled English spires testifies to the waning artistic impulse to-day. We may pass over the evolutions of the Gupta style and examine more closely the splendid Gujerat style after which the immortal temples on Mount Abu are built. The temples were erected by Vimala and Tejpal and the fabrics are wholly of exquisite white marble on which the bygone artists of India have expended their exuberance of fancy with the result that wax could not be more delicately carved. Take the richly decorated columns of Tejpal's temple, or the delicate art-work on the ceiling of Vimala's temple. In the Mount Abu temples, one loses oneself in a fairy land of dreams. Anyone must be struck with amazement to see how the dull plain blocks of marble are transformed into living idols of ideal feeling and beauty. A forcible instance of how callously devoid of artistic feeling we are to-day is the fact that the beautiful temples at Osia are turned into public latrines by the people of the town.

We may pass on to the Dravidian style. A characteristic feature of this school of architecture is its straight-lined tower divided into stories by horizontal bands, surmounted at the top either by a barrel-shaped roof or a small dome. The earliest examples are to be found in the Seven Pagodas of Mahabalipuram (erected in Chola times), all carved as the legend goes, out of one huge block of stone. The temples at Kanchi, built by Pallava Kings, are famous for structural detail and

artistic finish. The Chola King Rajaraja and his son Rajendra built at Tanjore some of the finest specimens of the Dravidian style. The unexampled ornamental richness of the Subrahmanya temple at Tanjore is proverbial. We may allude in passing to the beautiful temples and choultries built by Thirumal Naik at Madura. But the most marvellous of all the temples found in Southern India are the rock-cut temples of Kailas at Ellora, excavated by a Rashtra Kuta King. Of civil architecture, the council hall at Vijayanagar may be cited as a good specimen. The temples at Somanathpur, Nuggehalli (in the Tiptur Taluk) and the widely-known Hoysala temples at Halebid and Belur (all in the Mysore State), are renowned for the excellent carvings that "leave no inch of the temples uncovered, and give no rest to the eye." A kind of moss and the huge roots of the ancient trees growing by are fast eating into the stability of these temples, and unless urgent measures are taken, they may in the course of a few generations crumble into ruin. We may pass on to the Suryanarayana Swamy temple at Mangala, built on the Bellary model. The genius of carving here reaches such a height of perfection, that no chased work in gold or silver could be of more delicate workmanship.

The artistic stimuli that moved India have had no less influence in Ceylon. Asoka annexed Ceylon to Buddhism and Ceylon has remained loyal to the traditional faith. At Anuradhapuram and Polannarua are found a number of dagabas or stupas and Buddhistic monasteries. These two ancient capitals are great centres of Buddhistic art.

Some of the foreign influences are very prominent in out-of-the-way parts like Kashmir and Nepal. Kashmir temples reveal much of the Doric element. In the narrow strip of the Nepal valley, hugged in on both sides by towering, snow-clad mountains, are as many as 2,000 temples, which have prominent Chinese characteristics—notably those at Bhatgoan.

There are in India at the present day 1,000,000 temples and religious institutions. This stupendous number has its explanation in the fact that every inch of India had to be deified in the national imagination, which could be most effectually done by sanctifying every other plot of land with a temple erected in honour of some god. Every spot of natural beauty has been commended to the national consciousness by the erection of a beautiful temple there. In all this, religious fervour has played the most important part. The result is that India has attained in art as Mr. Havell has said, "a depth and spirituality that scarcely entered into the soul of Greece, a height of sublime imagination and lofty idealism."

The Mohammadan invasions swept away before their tide many of the most valuable works of Indian architecture. The Somnath temple in Gujerat may be cited as an example. But modern tendencies have done greater destruction. Old works of art are neglected. Old traditions are forgotten. India is breaking away from its roots in the past, and its hopes in the future. Such tendencies, however, have been checked, especially of late. Schools of Art, Art Colleges, are everywhere springing up. The Government has been doing what it can in the way of restoring ancient relics. Architecture is the peculiar property of a country. Unlike other products of art, it cannot change its place. It is immovably fixed and is the peculiar result of the time and the place. Only amidst its special surroundings does it produce any impression. Such works of Architecture need to be preserved, but not improved. Unlike Painting or Sculpture, Architecture in India has very little of the foreign element in it, and is essentially the result of high originality and the beautiful ideals that religion has invariably supplied to art in India.

N. MADHAVA RAU.

*(To be continued.)*

## ENGLISH INDUSTRIAL HISTORY.\*

DR. A. P. USHER's book on the Industrial History of England is planned and written with a view to the needs of students beginning work in economic history. Meant primarily as a study of industrial history, the book contains also two chapters on the agrarian movements so as to give the reader a fuller knowledge of economic history in general.

Prof. Usher starts with a preliminary study of the various types of industrial organisation and stages of development. While discrediting the socialistic interpretation of economic progress, as based on Bucher's *Industrial Evolution*, the author classifies industrial forms as household industry, wage-work, craft-work, the putting-out system and the factory system. These various forms are merely the outcome of the progressive division of labour as limited in its turn by the extent of the market. There is thus a close interdependence between the commercial and the industrial development of a state. In proof of this Prof. Usher cites examples from the history of Phœnicia, Greece, Rome, Egypt and Mediæval France, and concludes that in all ages the growth of industry is largely dependent on the development of urban life, and that whenever commercial intercourse between communities arises on a large scale, territorial division of labour in production develops, and industry passes from the household and craft stages and assumes a more highly organised form.

With the fourth chapter begins the study of the industrial development of England. English Economic History falls into two distinct epochs. During the Middle Ages, England was a frontier province of Europe, and her industrial and commercial life was dominated by continental influences. But after the Industrial Revolution, England became the leading exponent of Western civilisation both in the initiation of new technique and in the dissemination of European influences in the Orient and in the New World.

In the Early Middle Ages England was mostly an agricultural community; there was no urban population, no groupings of population sufficiently large or dependent on commerce and industry as distinct from agriculture. The Norman Conquest made England part of the European world, and the brisk trade that set in with France and other

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\* *An Introduction to the Industrial History of England.* By ABBOTT PAYSON USHER, PH.D., Assistant Professor of Economics, Cornell University.

continental States from the eleventh century onwards led to the growth of industrial towns. This period of economic development has been characterised by Bucher, Schmoller and others as the period of town-economy. The usually accepted interpretation of town life in the Middle Ages is that "during a considerable period of ancient and mediæval history all complete political structures were city states, in which political and economic life, local economic selfishness and political patriotism, political conflict, economic rivalry all coincided." Prof. Usher, while admitting that there is some truth in this description, doubts the entire correctness of it. In an age of extreme formalism the charters and ordinances seem to show a highly concentrated and exclusive political and economic life as characterising the towns all over Europe. But Prof. Usher points out how such factors as the periodic fairs and the growth of privileged trading communities really introduced an element of interdependence, making the then known world of Europe a single market. He concludes by drawing our attention to the paradox of mediæval life, the fusion of localism and cosmopolitanism. Society seems to be divided into tiny autonomous units,—villages, manors, towns and privileged ecclesiastical bodies. But in spite of this appearance of minute subdivision, the spirit and essence of mediæval life was essentially cosmopolitan, and this general cosmopolitan movement was organised about the towns.

Coming to the organisation of industry in the Middle Ages, Prof. Usher describes briefly the organisation of the Merchant and Craft Gilds and explains also their relation to each other and to the town. He concludes by saying that in the case of the Craft Gilds the religious and charitable character was more conspicuous than the purely industrial, that only a portion of the artisan population was organised in Craft Gilds, and that only a few of them attained any degree of power by reason of size or wealth.

In any study of the industrial development of England, the growth of the woollen industry deserves the place of honour, this being almost the first important industry developed to supply the foreign market also. Thanks to the encouragement given by the Edwards and the Tudors, England, which in the Middle Ages was only exporting the raw wool, became the sole clothier for all Europe. So far as the technique of the industry is concerned, all the important improvements were effected during the period before the Industrial Revolution, and the woollen industry became the most important in the land. Owing to the expanding market, the industry soon passed out of the craft stage and the putting-out system became widespread, introducing the capitalist



manufacturer. This system continued to the days of the Revolution, when it was displaced by the factory system.

The Industrial Revolution at the end of the eighteenth century is at once the most momentous and the most widely discussed change in the industrial life of the modern world, affecting it in nearly all its aspects. The term Industrial Revolution, first used by Blanqui in 1837, and suggesting that the industrial change utterly transformed social life at the opening of the nineteenth century, has captured the imagination of later ages, and despite misleading connotations it will doubtless hold its place in the literature of the subject. But its full import is not easy of statement. No single formula can adequately describe the complexity of forces and reactions that gave the movement its profound significance. There were changes in the readjustment between industry and agriculture, readjustments in the textile trades brought about by the rise of the cotton industry, technical developments in the metal industry which gave the whole group of metal trades a more important place in the industrial society. The transition, however, was by no means so sudden as is sometimes imagined.

The abandonment of the idea that the Industrial Revolution was sudden involves a considerable readjustment of chronology for the entire movement. The study must be carried farther back into the past and brought down nearer to the present time. The Industrial Revolution may justly be said to have begun about the commencement of the eighteenth century, and to have been in progress all through the nineteenth. The outbreak of the recent world-war may be taken as serving naturally as the line of demarkation closing the Age of the Industrial Revolution.

The second half of the volume is thus taken up with the description of this wonderful series of changes that goes by the name of the Industrial Revolution, and some of the consequential readjustments in technique and organisation. A description is given of the mechanical inventions in the cotton and other textile industries, and the reorganisation of the metal trades.

The factory, which looms so large in modern industrialism, is here discussed. After describing the chief features of a modern factory (the introduction of machinery, large scale production, concentration of labour and dependence of labour on capital, and the slow rise and progress of the factory system), the author seeks to read a fresh meaning into the whole movement. The writers of the early nineteenth century and the Socialists described it as the supplanting of human energy by the machine, as the enslavement of man by the greed of unscrupulous capitalists, and so on. As later investigations have shown,

the misery of the labouring classes in the early days was due to several convergent forces. It must be admitted that economic distress, the "pain of transition," was a necessary feature of the Industrial Revolution. But proper regulation of the purely social problems has now considerably lessened such evils. The introduction of machinery has not made slaves of men; it has emancipated them and placed the emphasis on the fundamental character of the individual. Modern industry has great rewards for the *man*. The old distinctions between the skilled and the unskilled might better be abandoned for distinctions between the responsible and the irresponsible.

The changes in the organisation of industry arising from the development of a world market and the problems of production on a large scale are next dealt with. Collective bargaining and the gradual recognition of trade-unionism by the State was a natural growth of the factory system. Another phase of factory life was the interference of the Government, through factory laws, to secure the labourer sufficiently healthy surroundings and to fix a maximum number of hours of labour. As closely related to the same purpose—that of bettering the social and physical environment of the workman—are the Poor Laws, the Insurance Act, the Old Age Pensions Act, and so on. All these statutes are an expression of the increased consciousness of the urgency of the social problem, and they have led to great dissatisfaction with the old standards. The problem of the abolition of poverty is as insistent at the present day as at the opening of the nineteenth century, and it is difficult to say if any system of taxation that is now conceivable will ever abolish poverty.

The growth of combinations and trusts is another feature of modern industrialism, but here England was later than Germany and America. The explanation for this is to be sought not so much in the individualistic character of the Britisher as—primarily—in the character and location of the mineral and extractive resources of Great Britain, and—secondarily—in the Free Trade policy and the features of international competition that make that policy wise in the case of England. Though a little late, combinations have achieved some degree of success in the textile, steel and ship-building industries. Socialists see in the success of these combinations the welcome transition to the stage when all industry can be nationalised. To quote from Macrosty,—“Competition came into the world to free trade from feudalism, and having done that played havoc with the lives of men. . . . Finally competition, turning against itself, has ended in combination, and private monopoly threatens to overwhelm the state by economic and political oppression.

We cannot turn back the march of progress ; for good or evil we must now face the concentration of industry. We cannot go back to competition, but we can direct the new tendencies into safe channels. In the collectivism of industry lies the future hope of society, and it will be attained by the gradual transfer of one branch of production after another under the control of the municipality or the government." The history of the British railways and of the governmental regulation of them would seem to illustrate the above tendency. Consolidation was already far advanced when the railways were taken over by the Government at the beginning of the war. The mechanism for joint operation existed, and officials had had much experience in co-operative endeavour. Public opinion was not unfavourable to consolidation, and there was much agitation for national control. Consolidation meant greater governmental supervision, and this would differ only in name from governmental control—The socialistic position assumes the impossibility of a middle course between competition and absolute monopoly. But it cannot be said that competition and monopoly are so entirely exclusive of each other. It may be possible for industry to achieve some measure of stability of organisation without becoming entirely monopolistic on the one hand and without losing all elements of a competitive character on the other.

The last chapter relates to the important subject of income, wages and social unrest. Though it is difficult to measure the amount of progress achieved during the period of the Industrial Revolution, it cannot be denied that taken in their entirety the changes in the form and character of social life have resulted in real improvement in the material basis of life. Several years have been added to the reasonable expectation of life, there has been a considerable increase of income in all classes of labour, and there also seems to be a fair diffusion of wealth among the moderately well-to-do people. On the whole, there are grounds for believing that the artisans and middle class people have at least maintained their position in the community, if they have not actually gained in relative well-being.

But in spite of this there is a growing consciousness of inequality in the distribution of wealth, and growing social unrest. Chartism, the growth of trade-unionism and the development of English Socialism all illustrate aspects of this labour unrest. Recent events have revealed that the labour movement includes every variety of policy—from the most radical socialism, looking towards a violent revolution, to the most patient constitutionalism. The radicals are filled with an intense enthusiasm and conviction, and theirs is an unrivalled activity in propaganda. The more radical propaganda, based on the discontent created by the

rise in prices, represents a deliberate attack on the existing organisation of society, fostered by the belief that the means exist for the payment of wages sufficient to assure a much more comfortable living to all manual workers; and the whole movement seems to be leading England uncomfortably near a social revolution. The Socialists depend in part on the appeal to current hardships, but their doctrines are of more general appeal. They hope to capture the entire Unionist organisation. But the great majority of Unionists are eminently conservative in temper, and Socialist propaganda has not yet made a deep impression on the party. The middle-class Socialism of the Fabians has failed to develop any real strength among working-men, and it is not clear yet that the more revolutionary socialists will succeed.

Such is the story of industrial progress in England as told by Prof. Usher. Written with the object of serving as a text-book for the beginner in economic history, his book is simple and easy in style, while at the same time highly suggestive. Only a few broad features of economic development are selected for treatment, and here and there the course of development is illustrated by a few maps and graphs and statistical figures. For the benefit of the intelligent student anxious to study further, there is a well selected bibliography on each topic, and this enhances the value of the book.

While Prof. Usher does not profess to give an exhaustive study of the whole range of Industrial History, a fuller treatment of some topics and the addition of one or two more would certainly make the volume more useful even for the beginner. Prof. Usher admits that there is a very close interdependence between the commercial and the industrial development of a people. Enough attention has not been paid to this matter in discussing the problems of the Industrial Revolution. The mercantile policy, the establishment of a number of trades and industries in England between the sixteenth and the eighteenth centuries, and the growth of the over-sea possessions at the same time certainly deserve a fuller treatment, as preparing England for the Industrial Revolution. The condition of English Industry before the Revolution might have been described in more detail. Coming to more recent times, while all the important problems connected with the later phases of the Industrial Revolution have been dealt with, the problem of strikes and industrial disturbances deserves more notice. Elementary as the book professes to be, it would have had an apt ending if the author had just indicated, at least, some of the effects of the Great War on British industry and the lines of the reconstruction now slowly developing.

## DOMINION HOME RULE IN PRACTICE.\*

"IF I had to distinguish the British Empire from the empires of the ancient world, I should be inclined to say that her supreme distinction lies in this: she is the nursery of freedom."—*J. H. Morgan.*

The observation quoted above finds ample evidence in Prof. A. B. Keith's book. It is indisputably so at least with regard to the Dominions. Prof. Keith's book is a sequel to his famous book on the same subject, "Responsible Government in the British Colonies." It is specially useful to the student of politics because it contains the outlines of the Dominion constitutions, traces their developments since their several origins, and describes the present situation clearly. What is more, much light is thrown on tendencies, thus indicating what the near future might be. The volume is particularly interesting to the Indian student and statesman at a time when the beginnings of Responsible Government are being made in India. To take the experiences and achievements of the Dominions as model would, of course, be fallacious, but at the same time a study of them certainly suggests a good deal and such suggestions may profitably be utilised.

The acts of 1867, 1900 and 1909 ushered into existence the three federated Dominions, and their present situation is the outcome of amendments and conventions which have grown upon their constitutions, interpretation thereof by the Judicial Committee of the Privy Council, the growing importance of Dominion commercial interests, the problem of imperial defence, which has become serious as a consequence of the Great War, the conflict of racial interests within the Empire, and the development of the League of Nations and International Councils allied to it.

### CONSTITUTIONAL CHANGES AND CONVENTIONS.

In the federal constitutions, legislative and executive authority is shared between the central and the local governments on definite principles which neither can vary. In Canada all important constitutional changes have been brought about by imperial legislation. For

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\* *Dominion Home Rule in Practice.* By A. BERRIEDALE KEITH, D.C.L., D. LITT. The *World of To-day* series. Oxford University Press.

instance, in 1907 the subsidies to the provinces from the Dominion Government were re-apportioned; in 1915 the constitution of the Canadian Senate was altered; and in 1916 the life of the Parliament was prolonged by a year. In Australia a vote of the electorate has authority to amend the constitution; but no important change has been brought about, though the labour party there would put an end to the federal system itself. In the Union of South Africa the anti-Indian 1919 Act is in spirit against the safeguards contained in the constitution. The 1920 New Zealand Act also has increased the stringency against Indian immigration and enfranchisement.

Several states in the Commonwealth have reduced the powers of the Upper Houses. New Zealand and some states have introduced preferential voting and proportional representation.

Though constitutional changes have been few and far between, a number of conventions have grown up. The Imperial Parliament has come to take up legislation affecting the Dominions only when both the Central and Provincial Legislatures clearly ask for it. In practically all cases where Dominion governments and the government of the United Kingdom have differed, the Dominions have been allowed to have their own way. For instance, compulsory military service fell through in Australia during the war, and the British Government, while arranging for obligatory military service by all British citizens resident in the U.S.A., excluded the Australians there from the operations of the law. Similarly, when appointing a Governor or a Governor-General, the Imperial Government in practice ascertains the acceptability or otherwise of the nomination. Opportunity is given for objections. Yet, in Queensland, the Imperial Government interfered with the local acting Governor's action and appointed another when they found that the powers of the Upper House were being attempted to be put down by swamping the Upper House in session. Consultation on imperial matters has become more frequent, and the independence of the Dominions has increased both commercially and judicially.

#### THE JUDICIAL SYSTEM.

According to the 1844 Act the Judicial Committee of the Privy Council is the highest imperial court, to which appeals lie from all the Dominions. But the general tendency has been to diminish the interference of the Judicial Committee. In all matters except constitutional ones the Committee as a rule discourages appeals. The Commonwealth Supreme High Court has ruled that no cases involving constitutional questions should be tried by the State Supreme Courts, and no appeals

are allowed from the Supreme High Court. Thus in practice the Australian Supreme High Court is the highest Court so far as Australian constitutional questions are involved. This is the position also in the Union of South Africa. Yet there have been cases where the Judicial Committee's decision was against local sentiment, as when the institution of the Initiative and the Referendum was declared *ultra vires* in Manitoba.

Judges all over the Dominions are appointed for life or up to a fixed retiring age, and can be dismissed only by the Crown. Thus sufficient security is guaranteed to the judges against local executive influence. The only exception is in Queensland, where the President of the Industrial Court is appointed annually and enjoys the status of a Supreme Court judge.

"The value of the appeal to the Privy Council does not lie so much in the enforcement of a common view of legal issues as in its special competence to pronounce on constitutional issues and the extent of the royal prerogative; and in its power to enforce imperial legislation." Prof. Keith sums up in this sentence the purpose served all these years by the Judicial Committee. At the same time it must be remembered that constitutional issues are more and more being settled by the Dominion Courts themselves, and the royal prerogative and imperial legislation (except as legalising Dominion wishes) are manifesting themselves less and less. In addition, the present system is rather out of date; it is very costly and therefore bars poorer clients from taking advantage of the appeal; it is viewed as a symbol of imperial domination; and lastly it is often considered as a reflection on the capacity and integrity of Dominion judges.

The discussions in the Imperial Conferences of 1911 and 1918 show that the present system must change. Acts of 1895 and 1908 provide for the addition of Dominion judges to the Judicial Committee. But as no provision has been made therein for payment to such judges, some have worked on the Judicial Committee only when they happened to be in England. As a regular arrangement it has failed.

Mr. Chamberlain in 1900 and Mr. Hughes in 1918 proposed that the Judicial Committee must come to consist of permanent judges from all parts of the Dominions. Out of such a body divisions must go on circuit through different parts of the Empire, thus reducing the costliness of the appeals. But this suggestion has been disapproved of both by the Dominions and by the Lord Chancellor of England, and is unlikely to be adopted. So "the disappearance of the appeal to the Privy Council can be only a question of time."

## COMMERCIAL DEVELOPMENT.

In their early years the Dominions were busy putting their houses in order. The Imperial Government consulted them only when they were directly concerned in any measure. Thus a Reciprocity Treaty between Canada and the U.S.A. was arranged in 1854, and the Treaty of Washington was signed in 1871 by English statesmen on behalf of Canada. But "by 1880, largely as a result of representations from Canada, the principle was adopted that in framing general commercial treaties with foreign powers, the United Kingdom should secure that they would not be applicable to the Colonies without the assent of their Governments, and that if a Colony desired to conclude special arrangements with a foreign state, the Imperial Government would use its efforts to secure a treaty for this end, and would employ in the negotiations along with its own representatives a delegate from the Colony." These principles were included by Britain in treaties of 1882 (with Montenegro) and 1890 (with France). In 1895 there was a conference on the subject in Ottawa, and its conclusions were slightly modified by another held in 1907. In that year direct negotiation between a Dominion minister and a foreign minister was allowed, though final arrangement could be made only by imperial authorities. In 1911 an attempt was made by Canada to bring into effect a Reciprocity Treaty with the United States of America by reciprocal legislation and not by imperial means, but it was dropped on account of fears of being drawn into the U.S.A.

In 1899 Dominions were given the right of either adhering to or withdrawing from commercial treaties between the United Kingdom and foreign states. "After the Colonial Conferences of 1902, 1907 and 1911 the principle was still further extended, and arrangements were made with practically all the powers between which and the United Kingdom most-favoured-nation-treaties existed, permitting of the separate withdrawal of any of the Dominions, which thus received complete power of entering into close commercial arrangements with any foreign state without having to extend the same treatment to any other states on the ground of treaty rights." "The terms of the treaty must not contain any concession to the foreign power calculated to damage the interests of any part of the Empire, and the Dominion must extend to the Empire every concession it makes to a foreign power."

It was on commercial grounds that Canada wanted, and has secured, a diplomatic representative at Washington, and General Smuts has demanded a similar right for South Africa and Australia. Within the Empire various commercial facilities have been provided by Imperial



Conferences. "They have helped to simplify the law of naturalisation, to promote improvements in postal and telegraphic communications, to further preferential trade within the Empire, to harmonise shipping legislation, to promote uniformity of legislation regarding copyright, patents, trademarks and company law, to secure reduction of Suez Canal dues and the removal of the burden of double income-tax, to promote co-operation in imperial exhibitions, and to induce united action between the several parts of the Empire in dealing with questions of shipping, and statistics and other commercial issues such as the preservation of raw-material essential for Empire use."

#### DEFENCE.

The Army Act placed in the hands of the Government of the United Kingdom the task of keeping order in, and defending, the whole Empire. By 1870 the Dominions came to make full provision, according to the Colonial Naval Defence Act of 1865, for internal tranquillity. Gradually British forces were withdrawn even from strategic posts (as from Halifax in Canada in 1905), on the Dominions undertaking to make adequate local arrangements. Even in cases where detachments of the British army remain in the Dominions, contributions towards its maintenance are entirely voluntary. For the purposes of local service, Australia, South Africa, and New Zealand have adopted compulsory military service. During the war Canada and New Zealand adopted conscription, but Australia refused.

In 1909 a Naval and Military Conference was held, where "the principle was accepted that Canada and Australia should create fleet units which would be controlled by the Dominion Governments in time of peace, but would be trained on British lines and be subjected to the same form of discipline as vessels of the Royal Navy; while in war the Admiralty would take complete control."

Questions of territorial waters and international status raised difficulties which were avoided by an agreement drawn up by the 1911 Imperial Conference. "Under it definite stations were assigned to the Dominion fleets, which were to carry the white ensign like British ships, but also at the jackstaffs the distinctive flag of the Dominion; if the ships were to proceed beyond these limits the Admiralty was to be informed, and if they were to go to any foreign port the consent of the Imperial Government must be secured, and officers must obey in all international matters the instructions of the Imperial Government." The legal authority for such separate fleets was accorded by the Naval Discipline (Dominion Naval Forces) Act, 1911. In 1912 Australia and

in 1913 New Zealand started separate units. The proposal of Sir Robert Borden to contribute 35 million dollars towards the British Navy instead of starting a Canadian unit was defeated by the Senate, and led to the fall of his government. When war broke out Canada had two cruisers, Australia a good fleet, and New Zealand one small vessel. All were handed over to the Admiralty. During the war the Imperial War Cabinet, in which several Dominion premiers participated at different times, and for some time the Supreme Council in Paris, in which Mr. Hughes from Australia represented the Dominions—these two emergency bodies had the control. After the war, the Imperial Defence Committee took up the burden. In 1918 there was a suggestion that there must be only one navy for the whole Empire; but the proposal was rejected by all the Dominions. The improvement suggested was that in times of war control must be exercised by an imperial authority, not the British Admiralty. Also steps have been taken to depute British officers to Dominion armies and navies, so that there may be uniformity all round. Even during the war Australian regiments in the field were given all facilities for maintaining their own individuality. Lord Jellicoe toured the Empire in 1919 with a view to ascertaining the feasibility of creating an Atlantic Fleet and a Pacific Fleet, but the attempt came to nothing. The expenditure, and the principles and methods on which the Empire will organise its defence, will depend upon the results of the Washington Conference on Disarmament All Round.

#### IMPERIAL RELATIONS.

Originally the British Legislature, the fountain-head of the self-government acts, was considered to be the source from which any important change in any Dominion could be secured. But as time went on, local peculiarities told upon the relations between the Central Government and the several Dominion Governments. The relations between them can be viewed from four standpoints:

- i. Rights of Central Government in Dominion matters.
- ii. Rights of Central Government in Imperial matters.
- iii. Rights of Dominion Governments in Commercial matters.
- iv. Rights of Dominions in International matters.

The royal assent, the Governor's suspending clause, and imperial disallowance of Dominion Acts—these have become practically as dead as the king's veto in England. Almost all internal matters are settled locally; but wherever the British Government finds or suspects unhealthy developments, the right to intervene is secured either through constitutional safeguards or through public opinion, as with regard to

the rights reserved to Indians in South Africa, and the prevention of Queensland from annexing New Guinea and of Newfoundland from interfering with United States fishing rights.

In some matters the Imperial Government has led the way, leaving the Dominions to follow if they pleased, as, for example, in the case of the Copyright Act of 1919 and the Naturalisation Act of 1914. To bring about a certain amount of homogeneity within the Empire, the Central Government has often legislated for the Dominions. The institution of the language test as less offensive to the British Indians and the Japanese was British. For a long time the laws of marriage and divorce were applicable to all the Dominions, against their desire. The differential duties were removed in the Australian states by British pressure.

Commercial relations between England and the Dominions have already been referred to. In international matters the Dominions were left alone for a long time. At the Hague Conferences of 1899 and 1907 no Dominion was represented. 1911 saw the first visit of Dominion premiers, in the Convention of London. Since 1907 Dominion representatives have had a place in various international councils and commissions. For example, they took part in the International Radio-Telegraphic Conference of 1912, and in the conference on safety of life at sea, 1913-14. The victory of the Allies resulted in the Dominions demanding that they should be accorded in international matters at least the status of the minor Allied Powers. What they got was more than they asked for. They have got seats as original members on the League of Nations and "the League-Covenant, while it undoubtedly magnifies the status of the Dominions, at the same time unites them in a closer and a more effective link with the United Kingdom. There has arisen a necessity of continuous consultation among the Empire Delegates."

#### THE IMPERIAL CONFERENCE.

Independent of the particular relations so far referred to, there has been growing the necessity for better understanding and closer co-operation among the several parts of the Empire. The instrument devised towards this end was the Imperial Conference. This was first held in the year 1887, an undertaking being at the same time given that no Imperial Federation would be proposed. Another conference was held in the year 1897, in which, and in the next, held in the year 1902, only Dominion premiers participated. The 1902 conference recorded "the desirability of such meetings at intervals of four years." In the 1907 conference India was again deliberately omitted.

ground that India did not possess responsible Government," and "they saw the definite constitution of the Conference." Connected with these conferences were held now and then; for example in 1907 on Naval and Military Defence, in 1910 on Copyright.

The war rendered impossible the 1915 Conference; but individual and separate visits were paid by the Dominion premiers. On account of the prolongation of the war, the Imperial War Cabinet and Conference were organised in 1916 and, they were not dissolved till after the settlement of peace. All through, the Colonies have been showing a uniform dislike of any sort of federation. "None of the powers of the Dominions shall be impaired," was Sir Robert Borden's declaration. At the same time the Dominions are clamorous about their due share in shaping foreign policy, holding that concerted action should be based on the deliberate choice of the Dominions. Thus, even considering the activities of the Conference which has just closed in London, there cannot be drawn any positive suggestions as to the methods of securing continuous consultation. Annual conferences have been proposed, but disapproved of on account of the delay involved and the difficulties caused to Dominion statesmen.

Referring to the attitude of the Dominions, Philip W. Wilson observes,— "Their claim is that they are now in the fullest sense separate Sovereign States which, for historical and other reasons, accept what happens to be an identical allegiance to one sovereign—that they are therefore the equals of, and no longer subordinate to, the mother country." Whether Dominions have the right of peaceful secession has been a question. General Smuts claims no such right for South Africa. A dissolution of the Empire can be only by an Imperial Act and not by any Dominion Act, because "a legislature deriving power from an act has legally no right to undo the purpose of the act."

Something has been said of what the Imperial Conference has done. Yet on matters involving serious conflict of interests, the Imperial Conference has not been a success. No doubt this conference arrangement has the peculiar advantage of arriving at decisions from which particular Dominions may withdraw without causing any ill-feeling, since majority decisions have no binding effect on the minority. "The British Empire is indeed *sui generis* and to attempt to apply to it rules derived from the political experience of the past is doubtless as vain as it is difficult." Yet in spite of the advantage of consultation and of continual opportunities of impressing Dominion opinion upon the United Kingdom, on both of which, Prof. Keith lays much stress, and says that the immediate necessities of the Empire can be met by these conferences,

the system has in working important defects. The Imperial Conference cannot in the nature of it possess executive authority, nor is there any definite body to which it is responsible. Each Dominion representative is responsible to his own country, and thus he cannot guarantee the reconciliation of imperial interests with the wishes of his Dominion.

In order to meet the altered circumstances, Prof. Keith deems it sufficient for the immediate future to further organise the Imperial Conference, and for the purpose of settling legal questions to man the Judicial Committee of the Privy Council with Dominion representatives as well as British. It is interesting to place by the side of his view, the view of Prof. Hearnshaw, who thinks that the following kinds of work demand some sort of Imperial Federation, and nothing short of it can meet the situation :

- (1) Foreign affairs.
- (2) International affairs.
- (3) India.
- (4) Questions relating to Defence and Communication.
- (5) Such Financial questions as are involved in the four preceding groups.

The latter view gets support from the achievements of the Conference which has just broken up. Excepting on minor questions which could have been quite as well handled by Imperial Commissions, the last Conference does not seem to have achieved anything tangible. No doubt the participation of General Smuts in the Irish peace negotiations and his rumoured chairmanship in the Irish Peace Conference are significant. Mr. Hughes' membership of the Allied Economic Conference is equally notable. But it is hard to decide whether such cases are to be viewed as compliments to particular personalities. Almost all resolutions are vaguely worded, and in the nature of things they could not be otherwise. Such resolutions mean still less when they apply to or bind nobody in particular. On India the Conference has proved a failure. In short, the present situation seems to be that while the Dominions have set their faces against any sort of imperial interference or Dominion obligation, they at the same time demand in plain terms the privilege of influencing foreign relations and other imperial problems.

#### INDIA.

What has been, and what is, the position of India in the Empire, and how have the Dominions utilised their Home Rule in settling their relations with her? In 1907 India was excluded from the Imperial Conference. In 1911 the Secretary of State for India represented her

interests. But it is the part played by India in the war that has resulted in her being accepted as a regular member of the Imperial Conference. This and her membership of the League of Nations have no doubt raised her status at least theoretically. Yet the Dominions have in practice been uncharitable. The following sentences of Prof. Keith speak for themselves. "The time is clearly past when the United Kingdom could profitably seek by exercise of the power of disallowance to control Dominion Legislation in these matters (Dominion-Indian), and the recognition of the right of India to representation at the Imperial Conference is of great value, as evincing the true character of the issue as primarily between the Dominions and India. The effect of the services of India in the war has been marked; the Dominions have accepted the position that India is entitled to apply to immigrants from the Dominions the same rules as are applied in the Dominions to immigrants from India, and that, while exclusion of Indians seeking to enter for purposes of settlement is practised, such immigrants for temporary purposes as merchants, tourists, and students should not be subjected to vexatious formalities. The principle has also been conceded that Indians lawfully resident should, on condition of monogamy, be entitled to introduce their wives and children, and that, in principle, British Indians should not be accorded less favourable treatment than any other Asiatic race. South Africa has been unable to accede to the demand that resident Indians should be accorded full Civil rights, and Union Legislation of 1919 has reaffirmed and strengthened the old legislation of the Transvaal in the time of the Republic which refused to Indians the power to obtain real property, and has, while safeguarding existing rights, empowered local authorities to withhold licences to trade at pleasure from Indian applicants. New Zealand also in 1920 has found it necessary to increase the stringency of her legislation against Indian immigration, on the ground that Indians have succeeded in learning enough English during residence in Fiji to pass the language test, which has hitherto been the mode adopted for purposes of exclusion, and the new method adopted is certain to wound Indian susceptibilities; in Canada Labour agitators urge the deportation of all resident Indians, and all these issues can best be dealt with in conference, where some solution may be evolved more easily than by correspondence." This is a story creditable neither to the Central Government nor to the Dominions. If the issue is one between the Dominions and India, the position of Britain as mistress of the Empire becomes anomalous. Nor is the Empire in practice—Dominions aside—a voluntary aggregation of Commonwealths. It therefore lies upon Britain either to remove

the present ban on Indians, or to renounce her connections either with the Dominions or with India. The concessions offered by the Dominions do discredit both to the recipient and to the donor. The white oligarchy in South Africa is a black spot on the fair name of the Empire!

The official announcement of the 1921 Imperial Conference about Dominion-Indian relations begs the question and suggests the solution of the problem by a conference among the statesmen of the countries concerned. If an assemblage of Dominion premiers and the nominated (and therefore moderate) representatives of India could not look the problem in the face and solve it, Prof. Keith's optimism, at least so far as India is concerned, about the potentialities of the Imperial Conference is rather hard to follow.

Dominion Home Rule has been in practice for a time sufficient to test it. It has passed through strenuous times not only unweakened but confirmed. As matters stand, Britain has nursed the Dominions into *de facto* Free States, into states not merely free but also aggressive. The Dominion white man's democratic ideals are yet confined to himself, even when he is allowed to act for himself. Britain, undaunted, is ardently attempting to turn India into a Free State on Dominion lines. The Dominion-Indian problem is for the future to solve. The annihilation of distance by improved aerial communication has brought in new ideas in regard to the future administration of the Empire; and what exactly will be the changes depends upon how far the constituent parts of the Empire agree.

S. KESAVA IYENGAR.

## GLIMPSES OF TUDOR ENGLAND.\*

To make the past live, not merely to record it, is the task of the true historian, and the great writer achieves this by insight and by style. Such writers are but few, and those who combine accuracy with imagination are fewer still. How hard the reconstruction is—that it demands genius for its accomplishment—is apparent to anyone who has been confronted with “sources” and bidden to make history out of them. Yet even the humblest student of history is losing his opportunity if he does not try to do something with “sources,” to do some little construction of his own. To learn history from the text-books is not a university business. The ordinary student cannot indeed do much, but if he limits his efforts to a special phase or time, he may make for himself quite a useful picture. Even within such limits he must neglect much. The material that is most useful and stimulating to him is that of the most human and dramatic character, that which reveals directly the life of a people in a bygone time. This is precisely what is provided by the Cambridge “Readings in English Social History,” two volumes in which series have already been reviewed in this magazine. Though the books are small they contain extracts so well selected as to give life and coherence to the past. They have the strangeness and romantic interest of fiction, while they present historic realities in their most important, most neglected aspects. To the general reader also they are delightful, and we should like to commend the latest volume—that relating to Tudor England—by extracting a few passages. Unfortunately we cannot extract the illustrations. It must have been a matter of great labour to find pictures that so exactly illustrate the phases of life dealt with in the text.

There is a great deal about eating and drinking. A not too kindly Italian visitor declares that the English “take pleasure in having a quantity of excellent victuals, and also in remaining a long time at table. . . . And they think that no greater honour can be conferred or received than to invite others to eat with them, or to be invited themselves.” The same thing had impressed a French observer, who

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\* *Readings in English Social History*. Edited by R. H. MORRIS, M. LITT. Vol. III, 1485—1603. Cambridge University Press. 4s. net.



says,—“The people of this place make great cheer, and like much to banquet,” and remarks even of the artisans that “in a tavern they make good cheer oftener than once a day with rabbits, and hares, and every sort of food.” This Frenchman is rather envious of the wealth that makes such feasting possible, and he thinks with a sigh of the beautiful white bread that is as cheap in England as inferior bread in France, and of the “very soft cake, with raisins in it, which makes the beer taste doubly good.” There is no doubt as to the Tudor delight in good living, and Harrison (in Holinshed) has page after page of ironical description. One wonders how charity fared among such epicures. The Italian is no doubt hostile when he says contemptuously that the English “would sooner give five or six ducats to provide an entertainment for a person than a groat to assist him in any distress.” But there is a certain bitterness too in this remark of Harrison himself,—“As for the poorest sort, they generally dine and sup where they may, so that to talk of their order of repast it were but a needless matter.”

Harrison is equally satirical about fashions in clothes. To-day it is “the Spanish guise,” to-morrow it will be “the French toys,” then “the high Alman fashion,” and thereafter “the Turkish manner.” “Nothing is more constant in England than inconstancy of attire.” Tudor-time tailors were persecuted like our own. “How curious, how nice also, are a number of men and women, and how hardly can the tailor please them in making it (their “attire”) fit for their bodies! How many times must it be sent back again to him that made it! What chafing, what fretting, what reproachful language doth the poor workman bear away! And many times when he doth nothing to it at all, yet when it is brought home again it is very fit and handsome; then must we put it on, then must the long seams of our hose be set by a plumb-line, then we puff, then we blow, and finally sweat till we drop, that our clothes may stand well upon us.”

There is significance for all time in Bishop Latimer's insistence that a people's strength lies in its middle classes, and in his indignation at the grinding down of the yeomanry. His own yeoman-father had paid a reasonable rent, and was in all ways prosperous. His successor has to pay four times the rent,—“and is not able to do anything for his prince, for himself, nor for his children, or give a cup of drink to the poor.” “Well, well,” says the great preacher, “this is one thing I will say unto you, from whence it cometh I know, even from the Devil. I know his intent in it. For if ye bring it to pass that the yeomanry be not able to put their sons to school (as indeed universities do wonderously decay already). . . . I say, ye pluck salvation from the people,

and utterly destroy the realm." Harrison, writing of the two great universities, makes the same complaint. The colleges "were erected by their founders at the first only for poor men's sons, whose parents were not able to bring them up into learning; but now they have the least benefit of them by reason the rich do so encroach upon them. And so far has this inconvenience spread itself that it is in my time a hard matter for a poor man's child to come by a fellowship (though he be never so good a scholar and worthy of that room)."

The following account of "hue and crie," written by Sir Thomas Smith, is dated 1564.—"By the olde law of Englande if any theft, or robberie be doone, if he that is robbed, or he that seeth or perceiveth that any man is robbed doe levie hue and crie, that is to say, doe call and crie for aide, and say that a theft or robberie is doone contrarie to the Princes peace and assurance: the Constable of the village to whom he doth come, and so make that crie, ought to raise the parish to aide him and seeke the theefe, and if the theefe be not founde in that parish, to go to the next and raise that Constable, and so still by the Constables and them of the parish one after an other. This hue and crie from parish to parish is caried, till the theefe or robber be founde. That parish which doeth not his dutie, but letted by their negligence the theefe to depart, doth not onely paie a fine to the king, but must repaie to the partie robbed his dammages. So that everie English man is a sergiant to take the theefe, and who sheweth himselfe negligent therein, doth not only incur evill opinion therefore, but hardly shall escape punishment. . . . The same manner is followed if anie man bee slaine, for streight the murtherer is pursued of everie man till he be taken."

Shakespeare was, of course, expressing the attitude of his time towards football and footballers when he made Kent stigmatise Oswald as a "base football player;" and Philip Stubbes, in 1583, thus describes the game.—

"As concerning football playing, I protest unto you it may rather be called a friendly kinde of fight than a play or recreation; a bloody and murthering practise, than a felowly sporte or pastime. For dooth not every one lye in waight for his adversarie, seeking to overthrowe him, and to picke (pitch) him on his nose, though it be uppon hard stones? in ditch or dale, in valley or hil, or what place soever it be, hee careth not, so he have him down. And he that can serve the most of this fashion, he is counted the only felow; and who but he? So that by this means, sometimes their necks are broken, sometimes their backs, sometime their legs, sometime their armes; sometime one part thrust

out of joint, sometime another ; sometime the noses gush out with blood, sometime their eyes start out, and sometimes hurt in one place, sometimes in another. But whosoever scapeth away the best, goeth not, scot free, but is either sore wounded, craised, and bruseed, so as he dyeth of it, or else scapeth very hardly. And no mervaille, for they have the sleights to meet one betwixt two, to dashe him against the hart with their elbowes, to hit him under the short ribbes with their griped fists, and with their knees to catch him upon the hip, and to pick him on his neck, with a hundred such murdering devices ; and hereof groweth envy, malice, rancour, choler, hatred, displeasure, enmitie, and what not els : and sometimes fighting, brawling, contention, quarrel-picking, murther, homicide, and great effusion of blood, as experience daly teacheth.

“ Is this murthering play, now, an exercise for the Sabath day ? is this a Christian dealing, for one brother to mayme and hurt another, and that upon prepensed malice or set purpose ? is this to do to another as we would wish another to doo to us ? God make us more careful over the bodyes of our brethren ! ”

## REVIEWS.

*The Development of an Indian Policy* (1818—1858).—By G. Anderson, C.I.E., M.A., and M. Subedar, B.A., B.Sc. (Lond.). G. Bell & Sons, Ltd., London. 4s. 6d., Rs. 3-8-0.

This is the second volume of the general work called "*The Last Days of the Company*—A Source Book of Indian History" of which the first volume is named "*The Expansion of British India*" and the third to follow will deal with the economic policy of the Company. Thus the history of an important period of British rule in India is dealt with by the author in three different monographs treating of the three aspects of that history, political, constitutional and economic. The topics treated in the volume under review comprise (1) The Foundations of an Indian Policy (2) The Executive and Legislative Authorities; the Charter Act of 1833 (3) The Administration of Justice (4) The Public Services (5) The Suppression of Inhuman Customs (6) The Development of an Educational System (7) The Freedom of the Press and (8) The Last Days of the Company. On each of these topics are given select citations from the original sources and authoritative documents which are left to tell their own tale. A first-hand acquaintance with these sources and documents in which history is shown in the very making is thus rendered easily available to the student, the general reader and the publicist, to all of whom the book will be useful. "It is the height of Art to conceal Art": the canon also applies to the art of historical construction of which the most successful specimens are given by Stubbs for English (constitutional) History. The method of Stubbs should find a wider application in Indian History too. We have a fine illustration of it in Ramsay Muir's *Making of British India* and the work of the present authors is another successful contribution. It should be recommended as a text book for all students of the History of British India.

R. K. M.

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*Hindi Literature* (the *Heritage of India* series.)—By The Rev. F. E. Keay, M.A. (Lond.). Association Press, Calcutta, and Oxford University Press.

The editors of the *Heritage of India* series of publications point out that to every book accepted for the series "two tests are rigidly

applied : everything must be scholarly, and everything must be sympathetic. The purpose is to bring the best out of the ancient treasures so that it may be known, enjoyed and used." These tests are amply satisfied, and the purpose of the series is very well realised, by the work under review. It deals with a most important part of the "heritage" of India—the language that is spoken by the greatest number of people in India, by over a hundred million people.

Hindi as treated in this book comprises four branches, known as Rajasthani, Western Hindi, Eastern Hindi, and Bihari, but excludes Urdu. Each of these branches comprehends its own group of dialects, e.g., Brajbhasha, which is the language of Mathura and its neighbourhood, is a dialect of Western Hindi, as Maithili is that of Bihari. It may be noted in passing that the modern vernaculars of India are themselves derived from what are called *Apabhramsas*, which are the outcome of the Prakrits, the "natural" languages of the people as distinguished from the cultivated language, Sanskrit. Thus from the apabhramsa known as Magadhi have sprung the four modern vernaculars, the Bihari, the Bengali, the Oriya and the Assamese, while the apabhramsa called *Souraseni* has given rise to Panjabi and Western Hindi.

The rise of Hindi dates from the time of the Muslim invasions of India, and its earliest form was the bardic chronicles of Rajputana, in which the heroic spirit of the Hindu defenders found its utterance. Thus the heroism of Prithivi Raj called forth the stirring song of Chand Bardai, called *Prithivi Rajraso*, while that of Hammir, the Prince of Rantambhor, evoked the poetry of Sarang Dhar in the 14th century.

The next stimulus to the growth of Hindi was supplied not by politics but by religion. The 15th century opened in Northern India with extensive movements of Vaishnavism, or the spread of the Bhakti cult in its various forms. First came the cult of Rama of which the chief apostle was Ramananda (1400-1420). Some of his hymns in Hindi are even traced in the *Adi Granth* of the Sikhs compiled by Guru Arjun in 1604, in which are, indeed, embedded some of the earliest Hindi devotional hymns, such as those of Sadana, who was originally a butcher, and of Namdev, who was originally a tailor, both predecessors of the religious movement represented by Ramananda. The Bhakti cult of Ramananda was essentially a popular religion which was thrown open to the masses, and even to outcasts, and thus, like the Western Lollardism, depended for its propagation and literature almost entirely on the vernacular or the language of the masses, giving up the use of Sanskrit. Thus a great impetus was given to the development of

Hindi literature adopted as the vehicle of the stirring religious propagandism of the times. The immediate personal disciples of Ramananda were 12 in number, among whom were included a barber, a Jat, a leatherer, a Muslim weaver and a woman, and we owe to some of these some precious Hindi compositions. Then came Kabir (1440-1518), originally a Muslim weaver, who began as a disciple of Ramananda but afterwards founded the independent sect of Kabir-Panthis, and seems to have been persecuted by Sultan Sikumdar Lodi. A considerable quantity of Hindi literature is ascribed to, or was inspired by, Kabir, a part of which is even traced in the *Adi Granth*. Hindi literature owes a good deal to the work of Kabir and his schools, not merely on their own account but also on account of the later developments they inspired. Of these the most important was the religion of the Sikhs founded by Nanak (1469-1538), whose hymns and poems were in a mixture of Panjabi and Hindi.

The cult of Rama was followed by that of Krishna, which produced its own crop of famous Hindi writers, like Vidyapati Thakur, who wrote in Maithili, and Mira Bai, one of the most interesting figures in the history of literature and religion. A Princess of Rajputana, married to the Crown Prince of the Maharana Kumbha of Mewar, and widowed in early life, Mira Bai early developed an intense devotion to Krishna to which she gave utterance in impassioned lyrics composed in the Braj Bhasha dialect. The Krishna cult received a further impetus under Vallabhacharya, the son of a South Indian Brahman settled at Benares (1479-1531). Though he himself wrote in Sanskrit, his sect produced many Hindi writers. A remarkable poetical work of the period was the *Padmavati*, whose author was the Muslim Malik Muhammad Jayasi.

But the golden age of Hindi literature was ushered in by the Mogul Empire, with such famous names as Tulsi Das, Surdas, Bihari Lal, the Tripathi brothers, Dev Kabir and Senapati. Akbar himself, it seems, tried his hand at Hindi verses, while his ministers Todar Mal and Birbal were good writers in Hindi. Abufazl's brother, Faiz, also composed Hindi verses, while towering above them all was Abdul Rahim Khankhana, the son of Bairamkhan, reputed a consummate Hindi poet. At the same time the art of poetry was sought to be systematised by writers headed by Keshevdas. Akbar instituted the title of *Kavi Raj* (Poet laureate), and the post was continued even by Aurangzeb and by his son Bahadur Shah. Tulsi Das is, of course, the most celebrated name in Hindi literature, whose *Ramayan*, written in a dialect of Eastern Hindi with plentiful borrowings from Braj Bhasha, is "worthy to rank among the great classical masterpieces of the world's literature, and

is the Bible of the Hindus of Northern India." But the contribution of Tulsi Das to Hindi literature must be measured not only by his own works but also by those of his disciples and successors. The Rama cult revived by Tulsi Das gave rise to a number of sects making important contributions to Hindi literature, e.g., the Malukdasis, the Dadupanthis, whose founder Dadu was a cotton carder of Ahmedabad (1544-1603), and the Laldasis. Other minor sects like the Sadus, the Charandasis, the Siv Narayanis, the Garibdasis, the Ramsanchis, the Satnamis and the Prannathis, which we owe to the influence of Kabir, all served in common the cause of Hindi literature. Similarly, the Krishna cult is also associated with a galaxy of great Hindi writers, headed by Surdas, and with sects like the Radhavallabhis and the Haridasis, which have also produced valuable Hindi literature.

Lastly, the British connection of India by which the culture of India came into contact with that of the West stimulated a literary renaissance of which the principal exponent was Lallu Ji Lal to whom we owe the foundation of modern Hindi prose and its literary dialect. There was also a revival of Hindi poetry led by Harischandra, followed by the rise of the Hindi Drama.

This, in brief, is the history of Hindi literature, of which the details are admirably compressed within the compass of a small work of about 100 pages.

In a concluding chapter, Mr. Keay brings out the chief characteristics of Hindi literature by a very skilful and penetrating analysis. Among these he mentions its predominantly religious interest, which explains how it was poetical in character practically up to the 19th century, and the limitation of its range even within the ambit of religious subjects, the bulk of which is associated only with Rama and Krishna. But considering its vastness and variety even within this limited range, there is no doubt that Hindi Literature deserves well of Hindu India for having given to her the chief means of her self-expression, and securing thereby the continuity, integrity and independence of her native culture under an alien domination.

R. K. M.

*Six Historical Maps of India.*—MacMillan and Co.

Messrs. MacMillan and Co. deserve to be congratulated upon the excellent series of six maps illustrative of the different phases of Indian History, executed with a considerable degree of historical accuracy and artistic finish. The maps refer to the following periods :—

(1) 327 B. C. to 140 A. D.—It was the period which began with the establishment of the mighty empire of Chandragupta Maurya, which, in its territorial extent, was larger than British India and had achieved the further distinction of bringing within its limits considerable territories outside the borders of India itself, called in those days, Gedrosia, Asia, Arachosia and Paropanisadi, and now identified with much of Afghanistan, Baluchistan and beyond. The territorial extent of the empire is shown in a beautiful yellow colour on the map, from which is excluded the south as being the conquest of Bindusara, the successor of Chandragupta Maurya. This is, however, a mere theory advanced by the late Dr. Vincent Smith on the supposition that the northern conquests of Chandragupta Maurya might be considered to have been sufficient work for a single individual. But the theory does not seem to be tenable if we are to believe in the definite and long-continued tradition of Chandragupta Maurya abdicating his throne, following the great Jain saint, Bhadrabahu, in his southern migration, and finally settling down at Srawan-Belgola for a life of spiritual contemplation. It may then be taken for granted that the great Mauryan emperor who was a master of such an extensive empire must have chosen for retirement a place which lay within its limits. It may be added that even Dr. Smith, in the third edition of his *Early History*, felt himself justified in admitting the credibility of the traditions recorded in the Srawan-Belgola inscriptions. The map also distinguishes the extent of the empire under Asoka including the single addition he made to it by his conquest of Kalinga (after which he foreswore all conquest), as also the part of India which was independent of the empire. A valuable feature of the map is the tracing by a clear red line of the routes followed by Alexander in his campaigns. The period illustrated by the map includes that of Kanishka's empire, the limits of which are very clearly traced, to the great advantage of students studying its complex and confusing history. They will note with satisfaction how the Indian empire of Kanishka wielded its sway over territories outside India which were more extensive than those within India, from its metropolis at Purushapura or Peshavar.

(2) 320 to 647 A.D.—These were the spacious times of the two great empires of the Guptas and of Harsha. The evolution of the extent of the Gupta Empire is beautifully exhibited in the different stages represented by the nucleus of the kingdom formed by Chandragupta I, the additions made by the conquests of Samudragupta, the routes of whose *Digvijaya* towards the south are indicated by a bold red line, and, lastly, by the additions made by the conquests of



Chandragupta II. On the map are also distinguished the protected and tributary states of the Gupta Empire in the west and in the east, together with the states that were independent. The boundaries of Harsha's Empire are also sharply distinguished.

(3) 1000 to 1526 A.D.—This period witnessed the growth and decline of the first Muslim power in India, which was represented by the Turkish Sultans of Delhi. On the map are represented successively the conquests of Mahomed of Ghazni, of Shiha-bu-ddin, of Il-tut-mish, and of Alla-u-ddin, as also the route taken by Timur's invasion. There are also shown the states that remained independent of the Muslim powers together with those which revolted from Delhi, the period during which they maintained their independence being also indicated by means of bracketed dates. The position of the several Sultanates of the Deccan which arose on the ruins of the Bahmani kingdom is also shown on the map. The extent of the territory covered by the great Vijayanagar Empire of the south is also indicated very clearly.

(4) The Period of the Mogul Empire.—Different colours are used in the map to distinguish (1) Babar's Empire reconquered by Akbar, (2) additions made by Akbar himself, (3) additions under Shah Jahan, (4) additions under Aurangzeb and (5) independent states. The 16 *subas* of Akbar's Empire are indicated by Roman numerals, while bold lines of different colours indicate the Portuguese, English, French, Dutch, and Danish settlements during the period.

(5) 1795 to 1820 A.D.—This was the period which witnessed the zenith of the Maratha power in 1795, and also the process of its decline between 1803-1820. A variety of colours is used to indicate the extent of (1) The Maratha power in 1795, (2) the Maratha states after the Maratha wars, (3) British acquisitions from 1803 to 1820, (4) the Nizam's acquisitions, 1803, (5) autonomous states, 1817-1820, (6) the Afghan Empire. The frontiers of Mysore are those of 1790, i.e., before the siege of Seringapatam, when it had its greatest territorial extent. Lastly the British, French, Portuguese and Dutch Indias are indicated by differently coloured lines.

(6) The period of the growth of British Power, of which are marked out the different stages, associated with the acquisitions of territories made by Clive, Wellesley, Hastings and Dalhousie. The various native states are demarcated from British India, while additional British acquisitions are indicated by dates.

Indian History as a study bristles with peculiar difficulties. It is not always the history of a single country which can be traced and

treated as a harmonious whole; not the history of the fortunes of a single political authority or dynasty of rulers, lending itself to any unity or simplicity of treatment. How often does the history of India as a whole split up into a number of separate histories of her different provinces, obscuring and obstructing our vision of the broad march of Indian life and civilisation! How rarely do we find the political unification of the entire country realised under the dominion of a single, paramount sovereign like a Chandragupta Maurya or an Asoka, but how frequently do we find it destroyed by the rise of numerous subordinate sovereignties of co-ordinate authority, each with its own territorial jurisdiction! Indian History, so full of changes, moulded by so many influences, presents a complex web of which the different strands cannot be distinguished without difficulty. These kaleidoscopic changes of sovereignty and of its territorial basis are hard for the student to follow and remember, except with the aid of maps enabling him to visualise them. The student of history must constantly keep in view its geographical background, and must use these maps as indispensable aids to his study.

R. K. M.

*The Backward Peoples and our Relations with them.* (The World of To-day series.)—By Sir Harry Johnston. Association Press, Calcutta, and Oxford University Press.

It is no joke to create a scale of forwardness and backwardness among the peoples of the earth, but Sir Harry Johnston has attempted it at the beginning of this book. We look for India, and find that it is placed in the third class—that attaining 97 per cent of civilisation and culture. This is the position assigned to India as a whole, but it is recognised that certain classes in India belong to the 100 per cent division. "There are peoples in India leading still, at the present day, a savage existence in the forests. There are others as cultivated and educated in their different ways as those of Western and Southern Europe."—Having given a scale of backwardness, the author describes the most important of the "backward peoples," and proceeds to trace the causes of backwardness—causes in climate, disease, invasion and so on. Next comes the matter of the relationship between the forward and the backward nations, the duty of the former towards the latter, and the good and evil they have already done them. This—and indeed the whole book—makes interesting reading, not entirely unprejudiced but well-informed, sincere and vigorous. It is with

reference to religion that the prejudice asserts itself. It is pointed out with obvious truth, that "just as the bulk of the backward peoples are of coloured or tinted skin, so in the mass they are not of the Christian religion;" but one can scarcely consider the author quite fair to other religions. Further, space is so limited that statements as to subtle and disputable matters are made in an exceedingly categorical manner. There is, for example, something rather unsatisfactory (shall we say?) about this very brief and decisive statement on the subject of caste.—"The Aryan conquest of India produced in time the iron laws of caste which relegated two-thirds of the darker-skinned Indian population to a condition of serfs and outcasts. This was an attempt—a futile attempt—on the part of the original fair-skinned and often fair-haired Aryan invaders to preserve their fair skins and tall stature. It may be said tersely that Hinduism in religion has disqualified some 200,000,000 of Indian natives of the present day from competing on equal terms with their Muhammadan or Christian or Parsi compatriots, while it keeps them far below the European in mind-status."

Sir Harry Johnston finds much to praise and much to blame in the treatment of the conquered by the white conqueror. Much to praise: the invader has conferred many benefits. "Missionaries of education and mercy; men of science healing the diseases of the tropics and turning their discoveries of wealth to native profit; great administrators; great soldiers and naval commanders who have won battles for human freedom; these will be the items in the credit balance of the white nations when we draw up the account of their relations with the Backward peoples." Against this there is a big record of injustice and cruelty—the brutality, for example, shown by the employees of King Leopold of Belgium towards the negroes of Congoland.

What of the future? The backward peoples have come forward a long way, but they "would be wise to accept for some time longer the advice, the guidance, of those white nations which have the best home education, an unfettered press (the chief safeguard against abuse of power), and the beginnings, at least, of a national conscience of what is really right and wrong, according to the canons of Christianity." (Here a comparison is involved that is unfair to India in particular, though it is of course true that even India will still profit by western advice and guidance.) The comparatively backward races ought "to free themselves from fetish and fancy, myth or error, misleading tradition or absurd prejudice." But the white man must be more righteous—and more courteous—in his speech and deeds than in many cases he has been. The backward peoples "will no longer stand bullying, arrogance,

unfairness or deprivation of their land and the hazard of their present and future chances of happiness and ease." They "are right to insist on good manners and probity in their instructors, and on being allowed to share in the administration of their own lands when they have fitted themselves for such work by their education and training. They are right in refusing to allow money raised by the taxation and treasures of their own lands to be spent on countries outside—as Congo revenues were once spent on the adornment and equipment of Belgian cities and pleasure resorts. They are right in demanding equal treatment with the White man on an equal basis of education and ability. If, for example, the White settler in their country has a vote, a Native—no matter what his race—must have one likewise if he has attained the same educational qualification. If the public needs require that labour should be forced for public works or public emergencies, the resident White man must obey the call as much as the Native."

*The Chamars. (The Religious Life of India series.)*—By G. W. Briggs, M.Sc. Association Press, Calcutta, and Oxford University Press.

This series is already familiar to the readers of this magazine—the scholarship, care and sympathy of its writers, the importance of the service they are performing, the extraordinary interest, to all sorts of readers, of their themes.—The particular task which Mr. Briggs set himself was rendered difficult by its scope: while the Chamars of the United Provinces were chiefly considered, he investigated also the beliefs and practices of Chamars and leather-workers in other parts of India. Naturally, too, there was much difficulty in obtaining precisely accurate information. But every available means was adopted, from the consultation of census reports and of the writings of various authorities to the testing of the information of the latter, and the acquiring of new information, by patient questioning. "Men of many sub-castes and of all sorts," says the author, "have been questioned, farmers, tanners, shoemakers, wizards, gurus, and servants. Both the men of the villages and the residents of the towns and cities have been interrogated. The single aim has been in all cases to record the Chamar point of view."—There are a number of excellent photographic illustrations, and a full bibliography is provided.

1. *Some Religious and Moral Teachings of Al-Ghazzali.*—By Syed Nawab Ali, M.A. (*The Gaekwad studies in Religion and Philosophy: X.*)

2. *The Philosophy and Theology of Averroes.*—By Mohammed Jamil-ur-Rehman, M.A. (*The Gaekwad studies in Religion and Philosophy*: XI.)

The publication of books in India constitutes but a thin stream compared to their output in Europe and America. But during the last few years there has been a commendable zest in India for writing and publishing books on topics connected with the civilisation of the East. A very fair sample of this zest is to be found in *The Gaekwad studies in Religion and Philosophy*: under the energetic editorship of Prof. A. G. Widgery of Baroda. The series aims at a comparative study of religions in a philosophic spirit and seeks to bring out the essential unity of all religions. While a good deal has been done during the last half century by Western and Eastern scholars to establish and popularise the marvellous literature and philosophy of the Hindus it can hardly be said that enough has been done to present Mahomedan culture to the non-Mahomedan world in a spirit of genuine fairness. Gibbon's splendid eulogy of Saracenic virtues is easily forgotten, while the Moslem fanaticism has come to occupy a disproportionate space in the minds of men. European universities revel in the genius of Aristotle but few care to remember the singular broad-mindedness of Arabic scholars like Al-Ghazzali, Averroes and Avicenna who rescued the sage of Stagyrus from the intolerance of mediæval Europe. Prof. Nawab Ali of Baroda and Prof. Jamil-ur-Rehman of Hyderabad have rendered a distinct service to their own faith and the culture of the world by translating some of the works of two such masters as Al-Ghazzali and Averroes. We have no doubt that such translations will popularise Mahomedan culture and by showing how great ideas are common to all really great civilisations establish the futility of such vain distinctions as the culture of the East and of the West. Truth and nobility of heart are far greater than religious bigotry or boastful patriotism.

Al-Ghazzali was early left an orphan, and it became his lot to be educated by a Sufi. He had, however, too marked an individuality to accept Sufism in a second-hand way. He had his own peculiar struggles of thought and soul. He passed through many doubts, felt the weakness of dogmatic rationalisms, and finally rested in a mystic adoration of the divine. He did not hesitate to accept the teaching of Aristotle in many directions, but he fused it with the mysticism of the Sufis and found the truth of mysticism in the life and utterances of the Prophet of Arabia. These various strands in his thought mark out the tolerance of Ghazzali in an age when blind faith counted for more than honest independent reflection.

Ghazzali appears to have been a voluminous writer. A list of his works, as detailed by the translator, runs to nearly ten pages. But of these only two have been of great importance, as is noted by Prof. Widgery in his introduction. Prof. Nawab Ali has translated selections from the *Thya-u-Ulum-id-Din* (the Renovation of the sciences of Religion). They cover such topics as the nature of man, freedom, pride, friendship, love, the unity of God, and *Riza* or joyous submission to His Will. Ghazzali's discussion of causation under Freedom and Responsibility is undoubtedly a piece of acute reasoning worthy even of Spinoza. Real causation is ascribed to God alone, all else which passes for causation is merely a case of antecedents and consequents. The logical rigour of the arguments is relieved by thought-provoking allegory of the pen. The starting point of the allegory is a piece of paper with something written on it. The paper disowns all responsibility for it and holds the ink to account. But ink too repudiates it, so does the pen and the hand that had cut it. Hand accuses vitality as really responsible. Vitality declares itself as moved by Will, and Will declares itself a helpless slave to mind as Reason and Knowledge. What is knowledge, however, but a mere lamp, kindled by we know not what? So the allegory proceeds and the devotee finds rest and place in the holiness of God. Here is *Riza*, unquestioning joyous submission to God's Will, the end-all and the be-all of a genuine mystic whether of the East or of the West. But woe to him who boasts of his love of God. "'He who feels the severity of pain inflicted by Him,' said Lunnun, 'is no lover.' 'He who finds no pleasure in such pain,' returned the Sufi, 'is no lover' 'True,' replied Lunnun, 'but I say to you that he who trumpets his love of Him is no lover.' The Sufi felt the force of Lunnun's words and fell down prostrate before God and repented and did not talk again of his love." (pp. 160-1). "Virtues are the doors of paradise but pride and self-esteem lock them all." (p. 80) Not the least interesting feature of the book under review is the side-light it throws with exquisite human touch on the life of Mahomed with his humility, his charity, his simplicity. Mahomed the warrior was evidently an accident of the age, though his gospel has unfortunately come to have so much of militarist association through the misguided zeal of his followers.

The second of Ghazzali's famous books is the *Refutation of Philosophers*. It is pathetic to note how his zeal to protect religion, and especially the religion of Mahomed, did not prevent himself from being classed by his contemporaries and by later ages among philosophers. Even Averroës did not hesitate to speak of him as "an infidel" But the

"spell of honest thought" was on them both and Averroes himself in his old age did not escape Muslim opposition. He too in spite of his subtle endeavours to screen the Quran from the ravages of interpretation was dubbed an infidel!

The book on Averroes under review consists of two parts: (1) A Decisive Discourse on the Delineation of the Relation between Religion and Philosophy; (2) An Exposition of the Methods of Argument concerning the Doctrines of the Faith, and a Determination of Doubts and misleading Innovation brought into the Faith through Interpretations.

In the Discourse Averroes seeks to establish the right of philosophy to exist, nay, how philosophy is made obligatory by the *shariat*. The argument is hardly convincing, but brings out that splendid spirit of tolerance and culture that must have marked the palmy days of Saracenic civilisation. Speaking of the necessity of learning from the efforts of a previous thinker, he writes: "It is quite immaterial whether that man is our co-religionist or not, for the instrument by which purification is perfected is not made uncertain in its usefulness by its being in the hands of one of our own party, or of a foreigner, if it possesses the attributes of truth," (pp. 18-19) and he pens a tribute of gratitude to the ancients: the Greeks. He recognises three methods of believing: philosophy, dogmatic discourse, and belief through exhortation and inferences, and considers it to be the supreme merit of the Quran that it employs all the three methods. "Rational investigation is not contrary to Law, for truth cannot contradict truth, but verifies it and bears testimony to it" (p. 26). If there is any apparent contradiction, it is to be solved by the canons of interpreting the sacred text. It is at this stage that Averroes fails as a philosopher. He elaborately distinguishes—both in the Discourse and the Exposition—between the exoteric passages which must not be interpreted, but taken literally, and the esoteric passages, which need an interpretation. Woe to him who dares to interpret the exoteric passages. Abu Hamid (Al-Ghazali) dared to do it, therefore the fiat of Averroes goes forth that Abu Hamid's books shall not be read by men who are not learned, and if the learned read them, presumably they are to do so only to refute! It is this narrowness which vitiates the philosophic worth of the two translated works, and gives them an air of those futile theological disputes that marred the mediæval ages of Europe.

The whole of the exposition is actuated by the desire of keeping the rank and file content with dogma and of retaining philosophy as a luxury for the learned faithful. It was easy enough for Averroes to make out that all the interpretations he did not approve of marked

their authors as infidels. But he failed to see that once he admitted the necessity and relevance of interpretations, he could not place artificial barriers against particular interpretations. It was a curious irony of fate that Averroes was so worried about the orthodoxy of the faithful and put himself as their champion against "infidels" like Al-Ghazzali, and yet his own interpretations were resented by the populace, and Averroes in his old age was disgraced as an "infidel."

Averroes' two works translated by Prof. Rehman are not of any particular interest to non-Muslims. They palpably lack that universality which marks the utterances of Al-Ghazzali. Ghazzali undoubtedly shines by contrast, but the man who helped to establish Aristotle in his native Europe cannot afford to be forgotten, and the learned translator deserves to be congratulated on reviving the memory of a great scholar and a pious Muslim.

Prof. Widgery deserves to be thanked by all lovers of pure culture for his encouragement to his Mahomedan colleagues. There are many more such classics, yet awaiting translation; we trust they too will one day find a place in the Gaekwad studies in Religion and Philosophy.

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*Goods and Bads, Outlines of a Philosophy of Life.*—By A. G. Widgery Baroda. Rs. 5.

*The Heart of the Bhagavad-Gita.*—By Pandit, Lingesb Mahablagavat of Kurtkoti. Baroda. Rs. 2-4-0.

Prof. Widgery's book is a notable contribution to the Philosophy of values which has to-day become the central problem of philosophy. He gives us a clear and comprehensive classification and survey of the values of life and brings home to our minds their inter-relation and ultimate significance. As becomes a student of Eucken, Mr. Widgery lays stress on the active side of our nature. "Truth is reached more by vital energies welling up when the soul is concentrated on good purposes in life." Mr. Widgery is an uncompromising advocate of human freedom and insists that evil is a positive element in life. According to him the worst of the theories which teach us that evil is negative is not only that they are intellectually false but that they weaken the spring of moral energy. "They tend rather, when seriously believed, to the attempt by mere contemplation to come to some form of mystical union or identity with the absolute for which, *ex hypothesi*, evil does not exist. In other words, they militate against an active type of life devoted to the actual realisation of goods and the eradication of bads."

The following passage sums up the professor's conception of ultimate reality.—



"The conception of Reality reached is that of a supreme Mind, in active relationship with other minds dependent upon Him, but nevertheless able to diverge in their activities from the main course of His Activity. It may be supposed that all other minds but God are limited in their inter-relationships, only receiving impressions from and making impressions upon comparatively few minds other than themselves. The contact may, however, grow in extent, and there is no reason why eventually every mind should not come into direct contact with every other mind. As long as this is not the case, error is possible through any individual mind making judgments going beyond the range of its experience. God may be conceived as in direct contact with all minds, as dependent on Him. But the fact of this Divine contact and the nature of the influence involved is only to be explicitly known by the individual mind by its free activity turned towards God. In such contact also, directly and indirectly, the central meaning of Reality may come to be known. Similarly the character of the aims of lesser minds is only to be clearly understood by a definite effort. The knowledge of truths and the avoidance of error imply a constant endeavour to come into more direct contact with more and more of the constituents of Reality. This contact, is fortunately, productive of much more than a knowledge of truths; it leads also to the experiences of the beautiful, to moral and to religious values."

If it were not ungracious to quarrel with a book so full of interest and suggestiveness, one might be tempted to remark that Mr. Widgery is unduly severe on absolute idealism. Surely a system which has for its interpreters men like Green, Caird and Bosanquet, deserves a more considerate treatment than that given in the book. Mr. Widgery iterates the familiar objection against absolute idealism that it does away with the distinction between right and wrong. And yet it is written in Green's philosophy that the divine manifests itself in the moral experience of men. "The consciousness of God is not a knowledge of him of a kind with our knowledge of matters of fact, and yet is the most real, because the most operative, of all spiritual principles; a consciousness not definable like an ordinary conception, but which defines itself, in a moral life expressive of it, which is not indeed an external proof of the existence of God, but is in principle that existence itself, a first communication of the Godhead. Such consciousness has in manifold forms been the moralising agent in human society, nay the formative principle of that society itself." In the face of statements like these it is idle to say that absolutism may be charged with eradicating the distinction between right and wrong.

In "The Heart of the *Bhagavad Gita*" the Mahabhagavat sets himself to answer the question "what is the value of the *Gita* as a guide to practical life?" Truth is the ultimate goal of religion and philosophy; but the methods of approach vary according to the capacities and temperaments of the seekers after it. The practical efficacy of the *Gita* according to the Mahabhagavat consists in the fact that it recognizes these differences and prescribes different ways of realizing truth.

"Its (the *Gita's*) object is to show how the highest of the Vedantic truths are at the same time the simplest of all, how every one of them can be applied and is meant to be so applied to this very practical work-a-day world, and how religion means no more than philosophy applied to every day life.

"It classifies religious aspirants into four broad divisions, the active man, the emotional man, the mystic, and the man of reason. These four classes are not mutually exclusive of one another, for all the four characteristics do actually exist in every mind to some extent or other. The classification however is based on the predominance in individual souls of one of the four natures, and though no two minds may be said to be exactly similar in all particulars, yet the *Gita* considers that, for all practical purposes, it will be sufficient to divide human minds into these four types. And there is a Yoga for each of these types, though the goal to be attained is in each case the same."

The Mahabhagavat makes a somewhat disparaging reference to Pandit Sitanath Tatvabhusan's book "*Krishna and the Gita*," which contains a more critical and less inadequate appreciation of the teachings of the Divine Song.

The *Bhagavad Gita* enforces two great lessons, first, that there is a divine element in duty, and secondly, that the situation of man is the preceptor of his duty. More, however, than a philosophical treatise, the *Gita* is a magnificent poem and it requires the imagination of a poet and the fervour of a prophet to realize its dramatic setting and interpret its essential message. Such an interpretation has yet to come!

N. N. M.

*The Clarendon Series of English Literature—Wordsworth: Poetry and Prose, with Essays by Coleridge, Hazlitt and De Quincey.*—Edited by David Nichol Smith. Clarendon Press, Oxford.

This is an admirable series of class books, presenting in single short volumes "a representative selection from the greatest authors, together

with the best criticism of their work." The plan not only reduces to a minimum the usual editorial occupation of elaborating the introduction to the writer, but provides the student with good material for independent judgment, comparing critic with critic and, what is far more important, testing the critic by immediate reference to the author. With the help of these volumes criticism and text need not be studies apart.

The series was well inaugurated by *Milton: Poetry and Prose, with essays by Johnson, Hazlitt and Macaulay*, an excellent volume which our English Board of Studies has already captured for the undergraduate. The epic sublimity and architectonic grandeur of Milton are, perhaps, better appreciated in the mass than by sample, but Wordsworth is a poet made for selection and gaining by it immensely, as Arnold pointed out long ago. His prose, also, has more vital connection with his poetry than Milton's, discussing as it does the theories and aims underlying his poetic practice, whereas the latter is mainly occupied with political disputes and liberty's defence and only occasionally touches upon the poet's literary studies and ambitions. Poetry, and poet's prose and critics', very happily illustrate each other in this volume.

The selections from Wordsworth's poems, given in chronological order, are fairly representative, containing the usual favourites of the Wordsworth-lover. Of course, a lover would not be a lover if he did not insist upon his own favourites, and we confess to a feeling that the *Ode on Collins* and *The Old Cumberland Beggar* might well have made room for, say, the *Poet's Epitaph*, with its splendid description of the poet himself, or the *Sparrow's Nest*, in which he pays that handsome tribute to his sister Dorothy who gave him so much. We would have tacked on to the *Cuckoo*, that awakener of mystery, the later *Mountain Echo*, "answering to the shouting Cuckoo"—"like, but oh! how different!" But we are quite pleased with the present selection, and understand that a few of the minor glories are there to represent certain stages and sides of Wordsworth.

Among the prose specimens, there is an extract from the Convention of Cintra to relate to the sonnets dedicated to Liberty and National Independence and to remind the reader that Wordsworth was not a mere recluse, dreaming on Nature, but a fiery heart, crying out for the regeneration of man, not in Utopia but here, in the very world of all of us, where in the end we find our happiness or not at all! And there is his letter to Lady Beaumont, in which the "prophet of delight and mirth, ill-requited upon earth," assures her—"My ears are stone-dead to this idle buzz. . . . I doubt not that you will share with me an

invincible confidence that my writings will co-operate with the benign tendencies in human nature and society wherever formed ; and that they will, in their degree, be efficacious in making men wiser, better and happier." Bold prophecy, so happily fulfilled !

B. M. S.

*Representative Classical Essays.*—Selected by F. F. Monk, M.A. (Oxon).  
MacMillan and Co.

Mr. Monk believes that "in the interests of English education in India, a more definite distinction than has yet been made needs to be drawn between the mastering of English as a *language* and the study of it as a *literature*." He has accordingly chosen, for the intermediate student, thirty essays from Steele, Addison, Johnson, Goldsmith, Hazlitt, Lamb, Leigh Hunt and Washington Irving—not too difficult and fairly representative of the writers. There is a short introduction which deals with the nature of the essay and the historical setting and literary work of the authors represented. The inevitable notes appear at the end, but they are very brief, being confined to the explanation of allusions, Latin phrases, and contemporary incidents.

For the purpose intended by the editor the book is excellently suited, and it ought to serve as a good college text. Even those who are inclined to put the literary value of English studies higher will welcome it, as the specimens included are not merely easy English, but also good literature.

*A Brief Sketch of Social and Industrial History.*—By Edward Cressy.  
MacMillan & Co. 3s. 6d.

Change of conditions produces an altered outlook on social life, as a result of which fresh demands will arise and press for satisfaction, and hence the books that were considered sufficient for ordinary needs some time ago cannot satisfy us now. This is as true of books on scientific and historical subjects as of pure literature. The book under review attempts, as the publishers' note explains, to provide "for the large extension of the work of the Elementary School" in consequence of the Education Act of 1918. Young students are no longer content with getting together a few disorganised facts about industrial and social history ; on the contrary, they desire to have at their command definite information about certain things, so that they may speak of

them with confident knowledge. This "Brief Sketch" takes us through all the stages of human industry, from the fishing and hunting of the primitive cave-dwellers, through the manorial system of the Middle Ages, to the highly complicated factory organisations of modern times. Intertwined with the history of industrial advancement appears the social history of England. As the book is unencumbered with the mentioning of too many facts, it makes delightful reading to persons interested in the subject. At the same time, it is by no means a fragmentary volume. The stages of industrial and social development; obsolete types of organisation; great inventions like the steam-engine, the safety-lamp, the railway and the telegraph, and their effect on life; great events like the Black Death and the Industrial Revolution and their influence—all are treated succinctly and clearly, and with a keen sense of chronology. The plan of devoting the larger portion of the book to the period after 1700 cannot but meet with approval. We may remind our readers that the author, Mr. Edward Cressy, has already made his mark as the writer of a good text-book on Industrial History. We feel pleased to recommend the present book to young students and readers.

G. S.

*The British Empire. A Short History.*—By J. P. Bulkeley, M.A. With an introduction by Sir Charles Lucas, K.C.B., K.C.M.G. Oxford University Press.

Mr. Bulkeley was an educational officer in Burma. His book has grown out of a course of lessons given during the winter term of 1916 at Wellington College, Berkshire. In preparing it he has consulted the standard works on the subject and has used his personal observation of many parts of the Empire and of certain French and Portuguese colonies. The author intends the book for class-room use in secondary and continuation schools in order that the students may imbibe the "Imperial Idea." Teachers in High Schools and general readers will find it a good introduction to the history of the British Empire.

The central theme is the expansion of the British power in the different continents. The ordinary text books on this subject emphasise the daring enterprises and personal achievements of the heroes of the British race who founded the Empire. But in order that this book may be interesting and useful to the students of all the races occupying the different parts of the Empire, the author concentrates on two main interests—the influence of geographical conditions on human life, and the

growth of political institutions in the different parts of the Empire. The topics treated in the book may conveniently be placed under three heads—(1) The part played by England in the competition of races in discovering new lands and establishing colonies abroad (chaps. 1, 2, 3 and 4). 2) The separate histories in detail of the establishment of the British Empire in the different continents (chaps. 5, 6, 7 and 8). (3) A comparison of the growth of Empires in the nineteenth century (chap. 9).

The book is written in the form of a continuous narrative ; but the method adopted is purely historical. He begins with a brief account of the early centres of civilization along the banks of the Nile, the Euphrates, the Tigris, and the Indus, and mentions the three great land empires—the Babylonian, the Assyrian and the Persian. Next he traces the rise and fall of the Greek, Macedonian and Roman empires, and points out the part played by the Saxon and Norman races in founding kingdoms before the age of discovery. Then he describes the principles of the four periods of English colonisation in the 16th, 17th, 18th and 19th centuries. In chapters 5, 6 and 8 he traces the foundation and progress of the British Empire in North America, Australia and South Africa, pointing out in each case the influences of geographical features on the early settlers, the struggle between the European races in the early period, the establishment of order and peace, and the growth of representative and responsible government after a period of struggle with the mother country. In chapter 7 he gives an account of the establishment of the British Empire in India ; but High School students of India, studying Indian History, will find it elementary. In the last chapter, under the title “Modern Imperialism,” he discusses the meaning of the term *Empire*, and compares the growth of the British Empire with that of the colonial empires of France, Russia, Germany, Italy, Japan and the United States of America. Then he briefly describes the chief features of the British Empire, namely, its rapid expansion, its principle of the freedom of the seas, its free trade policy, its treatment of the backward races and its philanthropic principle of encouraging nationality and self-government. At the end of the book he raises the two chief problems now confronting the Empire, namely, the relations between the Home Government and the Dominions and the desire of the non-European subjects of the Empire (especially those in India) for self-government.

The author attempts historical generalisations whenever possible, and mentions subjects of modern political controversy. One or two illustrations will not be out of place here. While describing the settlement of the British races in Australia, he condemns in strong terms

the blotting out of the Tasmanian natives between the years 1804 and 1876. He also introduces the recent problem of Australia, "the question of Asiatic Immigration." Again, dealing with the aspirations of Indians for self-government, he says,—“Political unrest in India arises mainly from a growing sense of nationality, the inevitable result of a deliberate educational policy, which has provided India with a literature reflecting the most liberal western ideas; it may therefore be considered, within limits, as a healthy sign. No intelligent student of history or current opinion in England can doubt the honest desire of the majority of the English people to grant self-government to India and Egypt, as soon as they are fit to benefit thereby. In the case of India we are definitely pledged, by the Secretary of State's announcement in August 1917, gradually to introduce responsible government. But very careful consideration and caution are evidently essential in this business of emancipating India and Egypt from foreign control. It would be criminal for any statesman to proceed rashly or rapidly with such a delicate task. Progress must be gradual and safeguarded by proper precautions.”

The author seeks to show that the keynote of the Empire is unity in diversity, and that English history and Empire history are one and the same. But it would have been better if he had added another chapter pointing out the necessity for permanent union of all the parts of the Empire, and the advantages that each part, including Britain, would derive from loyalty to the Imperial Government and the sacrifice of separate interests to the interests of the Empire as a whole. As it is, this is a good reference book for the history students of the Entrance Class.

M. A. N.

## COLLEGE NOTES.

### Maharaja's College.

*The Karnataka Association.*—The Association has been turning out fairly good work. It has already met three times. Mr. B. M. Srikanthiah, M.A., B.L. has kindly consented to continue as the President of the Association. Mr. B. Krishnappa, M.A. and Pandit K. Varadachar are its Vice-Presidents.

The current year's programme of work includes ten lectures and two parliamentary debates. The Association is sanguine enough to think of editing a quarterly magazine.

The first lecture was given on the 10th of August. The subject was "The Importance of the Dasa-Kirtanas." It was clearly brought out that the outpourings of the divine devotees contain gems of worldly experience also, that they emphasise the dignity of man as man, and that they deserve a prominent place in the Kannada Literature.

On the 24th of August there was a parliamentary debate with the president in the chair. The problem tackled was,—whether Government should interfere to free society from the "pest" of beggars. During the course of a hot discussion, lasting an hour and a half, it was made plain that the beggar class includes people who by reason of youth, age, sickness or disability *cannot* work, and able-bodied truants who *will* not work, that relief should be afforded to the former class either by private associations or by the government, and that the able-bodied recreants must be forbidden to beg.

M. SITHARAMAIENGAR,  
*Hon. Secretary.*

*The Sanskrit Association.*—Ten meetings of the association were held in 1920-21, in each of which papers were read and eagerly discussed. Of the papers we single out for special mention the last one on "Indian Dualism," prepared by Mr. V. Sethu Rao, the Head Clerk of the College. Our heartfelt congratulations are due to him on such a thoughtful paper. The meeting was presided over by Prof. S. Radhakrishnan, whose remarks were not only eloquent but also characteristically



profound, suggestive and scholarly. Our thanks to him—and may we say that his departure means as much loss to the students of Sanskrit as to the students of philosophy.

During the past year the association conducted weekly conversational gatherings in Sanskrit, under the kind supervision of Mr. C. R. Narasimha Sastry, M.A. Part of the programme was to read short essays, which gave rise to discussions.

On the 29th July, 1921 the annual business meeting was held and new elections were made. For the services of Mr. S. Ranga Rao, the outgoing secretary, the highest appreciation was recorded. The present committee hope to follow the excellent traditions of the association.

M. NAGESHACHAR,

*Hon. Secretary.*

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*The Philosophical Association.*—At the first meeting, with Prof. A. R. Wadia in the chair, Mr. M. A. Venkata Rao of the M. A. class was elected Secretary. The new secretary began the work of the year with a short speech on “how morality is possible.” He tried to disimplicate the conditions subjective and objective involved in the fact of morality as such. On the subjective side self-consciousness on the basis of freedom was shown to be necessary. The urge of the universal was the next necessary postulate if the common ideals of mankind were to be possible. Next, if the urge of the universal was to have really the validity and the categorical authority it claims, it must be rooted in reality. On the objective side, the universe must be a single system of unalterable relations. Otherwise knowledge as the systematic disimplication of the real was impossible. Again, its order and regularity was necessary if it was to serve the ends of the spirit. These two lines of thought led straight to the postulate of the Absolute as the concrete spirit living in all things. Thus the speaker attempted to show how a whole system of metaphysics is necessary if we are to render the fact of morality intelligible.

The discussion was most stimulating and illuminating. Messrs. Sitarāma Iyengar, Valiulla and G. Ramiah took part in the discussion.

Prof. Wadia, in his instructive speech, challenged some of the dicta of the speaker, and remarked, while agreeing with him on fundamentals, that his method was too abstract.

At the second meeting Mr. P. Narasimhiah, M.A., the Assistant Professor of Philosophy, presided, and Mr. Yamuna Char, B.A., of the M. A. class, read a paper on mysticism. Mysticism was defined as a

profound realisation of the unity of all things in God. It was shown that mysticism is neither fatuous gazing nor mere emotional raving but the vision of "the light that never was on sea or land." The lecturer attempted to show the continuity of the mystic experience with that of everyday life. The paper was full of apt and illuminating quotations.

The discussion centred on the metaphysical validity of the mystic experience. It was agreed on all hands that the mystic experience, if it was not moonshine, must imply—not rationally and explicitly of course—a metaphysic, a correct vision of the structure and meaning of the universe.

The President made a lucid and interesting speech. He said that mysticism need not and cannot imply any metaphysic, for the rational construction of the metaphysic would destroy the unitary life of spirit. He defined mysticism as a profound sense of the unity of things and emphasised the unitary life of personality. He also dismissed the ordinary disparagement of mysticism as absurd, and held that mystics constitute the true vanguard of humanity.

M. A. VENKATA RAO,  
*Hon. Secretary.*

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*Sports.*—There is a decided fall in the numbers of those who engage in sports, partly as a result of a good many of the leading sportsmen passing out of the college and not being replaced by recruits in the first year. With a view to testing the efficiency of the freshmen, matches between them and the rest of the college were arranged in cricket, hockey and football. The results have not been encouraging, and the freshmen cannot contribute more than two or three to the college teams. The tennis courts cannot boast of many fresh enrolments. Hockey, however, is popular, owing, probably, to the short apprenticeship it demands.

H. V. B.

### Maharani's College.

A Kannada Section of our Debating Society was opened this year, and at its first meeting, which was presided over by Sri K. D. Rukminiamma, was read a paper on "Marriage" by Sri Channamma of the Second Year Class. A very hot discussion followed, in the course of which the point was raised how far marriage was conducive to the salvation of the soul. The general trend of

opinion was that there was no relationship between the two ideas. A few observations from the chair closed the meeting.

On the English side, the subject of debate taken up at the next meeting was "Co-education." In her essay Sri Channamma, the Secretary of the society, condemned the principle altogether. She took her firm stand on preserving *woman's individuality* unimpaired. On being pressed to give his opinion in the matter, Mr. H. S. Nanjundiah, our English Lecturer, endorsed this view. Mrs. Hensman, our English Professor, who also was present on the occasion, pointed out the absence of sound arguments against Co-education in the paper read by the Secretary. As the subject was too important to be disposed of in an off-hand manner, it was decided by Sri K. D. Rukminiamma who occupied the chair to resume discussion of the same topic at the meeting in September.

K. CHANNAMMA.

Once again our tennis court has begun to look lively with the re-opening of the college. Tennis seems to be the most popular game with us, and so our tennis court rarely lies idle on bright days. We wish we had a larger playground, so that some of us might vary our tastes a bit and take to badminton and basket-ball.

E. LOENEN.

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The Literary Association was addressed at its first meeting by Prof. B. M. Srikantia, M.A., B.L. The subject—"Lucian the Scoffer"—was presented in a most interesting fashion, and Mr. Srikantia's lecture was a source of delight and instruction.

A. KANAKAMMA.

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The Historical Section has begun the year's work well. Dr. Radha Kumud Mookerji was kind enough to be the first to address us. He gave us a very instructive lecture on the relation that exists between Political Science and Political History.

At another meeting a paper on "Progress" was read by Sri Manjamma of the Third Year Class. Sri U. Abhayambal presided and wound up with an enlightening and scholarly speech.

A. KANAKAMMA.

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The first social function was an excursion to the Jagan Mohan Palace. We took a keen interest in examining the pictures of the

time of H. H. Chamaraja Wodeyar, and the quaint dresses of the olden days. The inlaid furniture was worth seeing, and the beautiful tapestry, which was said to be more than one hundred years old, took our fancy. Some time was most pleasantly spent in looking at the various musical instruments, the china cups and saucers, and the fine specimens of sandalwood carving. It was time to go before we had seen half the things there. The excursion ended with light refreshments, which we enjoyed in the corridor above the marriage pavilion. We were sorry we had not more time to spend in that delightful place.

GLADYS ARBUTHNOT.

### The University Union, Mysore.

*Meetings.*—The first debate for the year was held on 11th July 1921 with the President, Mr. J. C. Rollo, in the chair, the subject of the bill being—"That inter-caste marriages shall be legalised."

The debate was conducted with much heat, more especially on the part of the movers. The subject lent itself to remarks which, owing to peculiar local social conditions, produced plenty of laughter. The motion was defeated by 48 votes to 33.

The second meeting was an impromptu debate held, also under the chairmanship of our President, on Monday the 18th July, 1921, at 8-30 P.M. It was the first of its kind to be held in the Union, and was intended as an experiment. In spite of the inclemency of the weather, the attendance was large and not a little charm was added to the proceedings by the moonlight. Five minutes was the limit allowed to each speaker. There were many "ready wits" who successfully stood the impromptu ordeal. Many had to uphold statements warranted neither by sense nor by conviction and their attempts, sometimes brilliant and sometimes awkward, added considerably to the fun. The speaker for the negative was nominated only after the affirmative had finished and therefore tense excitement prevailed during the progress of the speech for the affirmative. It caused not a little merriment to find a speaker disconcerted at having been called upon to maintain a theme like "nonsense is much better than nothing."

The meeting was unquestionably a success, and the members retired with a desire to hold many more such in the course of the year.

The Debate Sub-Committee of the Union is arranging a programme of debates and other meetings. It may be suggested that if members

who are non-students can make it convenient to take active interest with regard to this section, they will be contributing much to the life and prosperity of the Union.

The third debate was on the effectiveness of the spinning wheel for furthering the cause of swaraj. It was held on 4th August under the chairmanship of the Principal, Mr. N. S. Subba Rao, M.A., Bar-at-Law. Owing to the tense political excitement that prevailed at that moment, the meeting was largely attended. As usual, limitations of time barred many an enthusiast from taking part in the discussion. Unlike some of the other political debates, in which the House started with a preconceived bias in favour of or against the motion, this one made a good contest. The number of votes against the motion was 51 as against 92 on the other side, and, from the nature of the opposition and the numbers that it significantly recorded on its side, it was clear that the House had bestowed considerable attention on the subject.

After announcing the votes, the Principal made a short speech in which he drew the attention of the House to many an aspect of the question which it had ignored. He said that even after weighing carefully all arguments adduced in favour of the proposition he could not admit that it would be an effective practical solution of the problem before the country. He gave a graphic discourse on the strength of the economic position of England, and pointed out the futility of contending against such strength with such slender instruments as those the House was then considering. He suggested that the problem of clothing now menacing the country would be most adequately solved if people could adopt the modern factory system run on improved lines. With the factory administration brought under the limelight of public scrutiny it would get rid of most of its defects, particularly the inhumanity and the tyranny of the capitalist; and with the capital broken up into shares, and held within reach of every man, we should get rid of the other trouble about the capitalist's monopoly. The thanks of the members are due to the Principal for affording them such genial and authoritative advice on the most burning topic of the day, and for having effectively corrected those who would otherwise have crammed themselves with less rational opinion.

The last meeting for the month of August was that at which the inaugural address for the year was given. It was held under the august presidentship of the Vice-Chancellor, Dr. Brajendranath Seal. The Chairman opened his prefatory remarks with a scholarly elucidation of the ideals of a University Union, and laid special stress on the fact that a "Union was nothing if it was not Universal," and that any kind of

communal, provincial or even national tinge was a taint on its fair name. He referred to the University Union as a hall of chartered freedom for the happy impact "of man with man, of mind with mind and of man with nature," and as a centre where the culture "of the widest commonalty" must be spread. He invited the professors of the college to leave their academic shackles and unite with the students on terms of perfect healthy sociability. He referred to the Magazine, the Debate, the Histrionic and the Game sections of the Union as mere "scaffoldings" which must be utilised not for purposes of a sort of "variety show entertainment," as was often done, but for the higher purpose of raising an edifice of culture that must unite the teachers and the taught to feel the throb of life around them, a throb neither characteristically eastern nor western, but a happy blending of both.

Mr. Rollo then read the Inaugural Address (which is printed in this Magazine), and thus took the lead in associating his professorial personality with the life of the Union. The meeting terminated with a vote of thanks to the distinguished chairman and the much esteemed professor.

Before concluding these remarks on the literary activities of the Union, the out-going sub-committee for debates and lectures may attempt a review of its work in the course of last year. It has done its best to create the right atmosphere for lectures and debates, and has built up a tradition for active literary and other discussions. And through the continual solicitude of Prof. B. M. Srikantia, M.A. and Mr. N. Narasimha Moorthy, M.A., B.L., who worked as members of the Debate Sub-Committee, it has realised its ideal of brotherhood between the young and the old. The Vice-President of the Union, Prof. S. Radhakrishnan, left us last March. He was one of the "best friends" of the Union. He never denied us his company or his advice, whether it was during a general meeting or a meeting of the sub-committee. He leaves behind him the memory of a personality whose intellect was as remarkable for its power as for its wit, and whose heart was so spacious as to find room for every student of the college. Our hearty thanks to him. And finally a word of gratitude is due from us to Mr. Rollo. We cannot better acknowledge his services to the literary and debate section than by being permitted to exclaim, in terms of the popular saying, that "Mr. Rollo was the Union and the Union was he."

H. V. BHASHYAM,

*Convener of the Debate Sub-Committee.*

(Since the receipt of Mr Bhashyam's report, several meetings have been held, which we have not space to chronicle in detail. Mr. Mohamed Valiulla read an interesting paper on Bolshevism. There was, however, practically no discussion, only two members speaking, including the President, who occupied the chair. Mr. H. V. Bhashyam Iyengar, B.A., read a paper on the question whether women's parts should be played by boys or by women in the Indian theatre. Mr. Bhashyam (whose paper will appear in the next issue of this Magazine) was strongly in favour of introducing actresses, while this was opposed by most of the speakers. The President, while observing the neutrality befitting a European on this matter, pointed out that a certain amount of the opposition was prejudice, not argument. A debate as to whether Government should take measures to abolish Beggary in India elicited so much speaking that its conclusion had to be postponed till after the Dasara holidays.)

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*Indoor Games.*—The Union has provided tables for draughts, chess, dominoes and ping-pong, and before long arrangements will be made for other games as well. This section of the Union's activities is managed by a sub-committee. It may be interesting to learn that the sub-committee is keen on introducing a number of Indian games as well, and is busy collecting information on this matter.

No definite rules have yet been framed against the monopolising tendency of some of the players at the game tables. Though, as a matter of fact, rules are pestilential to one who seeks recreation in the Union, they are found, all the same, very necessary. But after all, the only satisfactory solution of this problem is an appeal to the good sense of the players.

An interesting feature of last year's activities was the institution of tournaments in various games. The competition was free, and prizes were liberally distributed by our enthusiastic President, Mr. J. C. Rollo, who is himself a very keen sportsman.

It has been the boast of the members who go in for the indoor games that they contribute more than anything else to the life of the Union—and by life they mean, of course, much more than the din they make. The right wing of the Union is undoubtedly the most popular centre.

H. V. B.

In the course of the report which is summarised above, Mr. E. V. Pattabhi Rama Iyer, Convener of the Games sub-committee, writes—

“If the magazine section of the Union stores members' minds with information of all kinds and strengthens the power of judgment on affairs of public importance, if the debates of the Union call forth the capacity of developing and working up parliamentary institutions, if the Co-operative Society discovers future men of business, the games section certainly justifies itself in bringing out the latent sporting instincts of fair-mindedness, justness of action, strong fellow-feeling and self-sacrifice which constitute the social life of a nation.”

**Note.**—Science and Educational Notes have been excluded from this issue by other matter.





# THE MYSORE UNIVERSITY MAGAZINE

DECEMBER 1921.

## EDITORIAL.

DR. MOOKERJI.—The departure of Dr. Mookerji to Lucknow means a most serious loss to the University, and it was with much personal regret also that we in Mysore bade him farewell. Dr. Mookerji is a scholar of whom any university might be proud, and during his four years in Mysore he was engaged in constant research, the resulting volumes bringing credit to the University as to himself. But he was no recluse in disposition or manner, and he won the affection of his students as well as their respect. We shall always remember his unhesitating willingness to help this Magazine by reviewing books relating to Indian history: his reviews were so careful and so scholarly as to be of exceptional value. The most cordial good wishes of all of us go with him, and whenever, as he half promised, he visits Mysore, he will have the warmest of welcomes.

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THE CONVOCATION ADDRESS.—The Annual Convocation of the University was held on October 14th, and, as Sir Leslie Miller did last year, the Vice-Chancellor both presented the Annual Report and gave the Convocation Address. In the Report there is nothing that calls for special comment: it speaks of successful work continued and of no change of policy. The Address—since published in its entirety—was delivered in an abbreviated form, for the Vice-Chancellor chose as his theme the whole significance of modern university education in India, in relation both to past development and to future service. He elaborated his ideal,—that of

the fusion of eastern and western thought, impulse, energy, in a world-wide kingdom of the soul, and showed how sterile is "nationalism" as currently conceived; and he insisted also upon the practical part to be played by this, a regional university, in the systematic development of all the resources of the State. The Address was a vindication of our work of to-day and a guide and stimulus to the much more comprehensive work of the future. This is the fullest statement we have yet had of what the Vice-Chancellor means to do. May it be achieved in his time, as indeed it may be if we are not troubled with notions and tinkering. We have an architect and should let him build. Some of our senators are busy gathering fragments of design from varied quarters of the globe, but this is mere pilfering. The architect who can see things whole and to expertness adds imagination is found with difficulty, and when found should be allowed to do the work that he alone can do.

THE VICE-CHANCELLOR ON "NATIONAL EDUCATION."—The following passage occurs in the Convocation Address. These definite and convincing words have been closely studied in Mysore, and might well be studied beyond its borders.—

"What is national education? Is it to be a return to the forest Ashramas or the monastic Viharas? Is it to be a return to the paint-bedaubed peepul tree in the village, to the dim cloisters in the rock-cut caves, or to the chequered shade of the Ficus Religiosa by a purling stream? Is it to be a return to recitations and mantras, to the oral tradition of learning, the memorising and the recital, the enthronement of authority and dogma?

"This would be a futile anachronism, even if the resuscitation were possible. But the spirit of Bharata Varsha is not an anachronism! That spirit transmigrates, and embodies itself anew in the generations of Man! Persian or Greek, Semite or Scythian, Turk or Christian, whoever has wandered here and pitched his tent within the shadow of the snow-clad Himalayan ranges or the sempiternal roar of the Indian ocean, has come under her mysterious spell. That soul of India has through the ages gone on creating a synthetic culture, in which Nature and Man have been comrades, all sentience has had its kinship recognised with reverence and homage, and the group or communal consciousness has been the nursery and school of the individual conscience. This Indian spirit has conceived an educational ideal and an educational organisation, and has written on imperishable tablets outstanding chapters in the History of Human Education, as memorable as those of

the Pedagogy of the Greeks, or of the European Renaissance. The essential stamp of the Genius of India is seen in many features of this indigenous education—in the out-door or open-air study in intimate touch with Nature, in a corporate life or residence which weans the young from the home for initiation into the greater family of the academic corporation, in long and leisurely years of scholastic study, and above all, in the rule of Brahmacharyya, the rule of the student life comprising three great vows, the vow of chastity, the vow of poverty, and the vow of labour. The vow of Brahmacharyya embraced not only abstinence from luxury and from all impure excitements, not only temperance in mind and body and speech, but also the obligation of Rita, the truth. The vow of poverty abjured all covetousness and money-getting, so that the private purse of the student, prince or beggar that he might be, was cut down to the barest minimum. The vow of labour imposed on the Vidyarthi, the seeker of knowledge, menial duties for the Guru-griha and the student brotherhood, not omitting building and household economy and conservancy, and made honourable even begging for the maintenance of the Gurukula. The educational ideal was twofold in character: in an individual reference it was Atma-Vidya or Brahma-Vidya, the knowledge of the Self or the vision of the Absolute as the Self, the ultimate goal to which every soul must press forward in the cycle of births and deaths; in a communal reference it was the conservation and transmission of the tradition of culture and learning, of the arts and sciences, from generation to generation, a debt which the individual owes and must repay to the Rishis, the Fathers of the Race.

“One characteristic mark of the educational organisation was this—education was organised as an integral element in a man's social status. The social and communal systems on which the educational organisation was based ordained a practically free and compulsory higher education for the Brahman, Kshatriya and Vaisya classes, and well-nigh universal primary education for the village communities. This social and communal status not only socialised education—it ensured that the theoretical instruction, whether elementary or higher, was supplemented by vocational training, in and through the Upavedas, and later on through the Vidyas and Kalas (sciences and arts),—though there was a retrogression in the latter-day Chatuspathis and tols. Such is national education, the genuine Swadeshi commodity. Our Universities have much to learn to-day from this old indigenous organisation. They may usefully build on the national foundation. But then the foundation must be broadened as well as deepened to answer the living needs of the *complex democratic* civilisation of modern times.

"But a so-called national education which is neither national nor even education, and which, in the anxiety to avoid breeding exotic plants and orchids in a hot-house, would convert the fallow young mind of a whole generation into a noisome jungle of impenetrable cactus and thistle, militates against the national Dharma of India—it leaves unpaid the debt to the Rishis, the Fathers of the Race. Back to Nature and her noble savage is the cry that goes up from the land. At this cry, Father Agastya in the South raises his bowed head and begins to retrace his steps, and that great machinist, Visvakarma, throws up his implements in despair, for the arts of civilisation which Visvakarma and Agastya initiated threaten to crumble away in a land which has been fitted to become a Karma-bhumi, a land of works, through ages of Tapascharyya.

"For a national education which abjures Science, machinery and foreign commerce misses the great outstanding fact in the History of ancient Indian University organisation and the connected History of India's commerce with the world. That fact is this—the great Indian Universities harboured the experts in machinery (Yantra-vidyas) and the chemists and metallurgists; and the three great Indian discoveries or inventions which followed—the fast dye, the indigo extract and tempered steel—enabled India to command for more than a thousand years the markets of the East and the West, and secured to her an easy and universally recognised pre-eminence among the nations of the world as the Mistress of the Middle East,—more so than the Munera Terrae, the perfumery and spices of her woods, the pearls of her seas, or the diamonds of her mines. A sane nationalism would revive the educational policy that led an Eastern country to that great achievement, a world-wide foreign commerce from the Eastern Archipelago to the shores of East Africa and South Europe, without the Imperialism of a Rome or a Spain. And if unfortunately India gave the secret of the Damascus blade to the world, an early instance of science ministering to the arts of destruction, she also gave the Buddha and the Perfect Law to a world in darkness and in chains. A sane Nationalism in a national Indian University would seek to harmonise science and mechanism with Ahimsa, and hold forth, to generations yet unborn and a world in tribulation, the Indian ideal, once realised in History, of a non-imperialist world-commerce, alike in natural commodity and in spiritual Freedom. Which University will lead the way, one would muse and wonder, that which inherits the double renown of Vidya-Vijayanagar, on the upper reaches of the Caveri, or that of the Eternal City on the Trident laved by the celestial Ganga, or is it to be both, linked together, as they significantly

are, by a common Head, one who is the patron of those giant works, those installations of modern science and mechanism, where the Caveri falls roaring on the jagged jungly rocks of Shiva-Samudram, like Ganga descending on Shiva's own matted locks,—and who is also the inheritor of the immemorial tradition of the East, of Maitri and Peace ! ”

THE MAHARAJA'S COLLEGE DAY.—The College Day celebrations were held on Sunday, October 16th, two days after Convocation, many of this year's graduates thus being able to attend. Everyone rejoiced at the return to a real College Day ; for last year there was merely an entertaining of the graduates of the year, which of course is not what the College Day Association exists for. But do all the old students who were inclined to grumble then realise the difficulties ? They are entirely financial. The purpose of a College Day is to bring back the men of past years and unite them for a day's social intercourse and sport with the whole body of the present men, finishing up with a glorious gathering in the evening. It cannot be done without considerable funds, and the Committee find it hard to obtain promises, infinitely harder to obtain cheques. This year enthusiasm has re-awakened, though the financial difficulty is still formidable. One trouble is that since the establishment of our University the College idea has—in the minds of many—been merged in the University idea. (The college-annihilating notion of doing away with the principalships arises thus.) Were the University to become really unitary the College idea would immediately suffer change, but the Vice-Chancellor does not even foreshadow this ; and so long as the present separation remains the College is what matters most to the student—for life and for remembrance.—By the by, why does everyone call the students of past years “ old boys ” ? Fancy talking of the “ old boys ” of an Oxford college ! Everyone here uses that term—even the members of the College staff—yet this is really to support the Philistinism that persists in referring to our colleges as schools, and sometimes calls a principal a headmaster ! Newspapers do it and the public does it, but there is no reason why we should do it ourselves.—On the College day there was a cricket match in which the so-called old boys alone had an innings, and the bowling they received was of a particularly genial kind. But there is no reason why a cricket match should be so desperately “ friendly,” for surely a tolerable eleven might be called up out of the past if things were taken more seriously ; and there could be genuine tennis matches also. This year the meeting was by far the best of it, under the inspiring chairmanship of Mr. P. Raghavendra Rao,

whose speech was a delightful blending of humour, reminiscence and by no means dictatorial counsel. The speaking was exceptionally good throughout. An interesting feature was the speaking at this gathering of father and son—Mr. Mir Humza Husain, whose speech, though but a vote of thanks, was full of delicious humour, and Mr. Ikhbal Husain, who, voicing the thanks of the students, covered himself—and incidentally the Union!—with glory.

MR. RAMASWAMAIYA'S SPEECH.—It is a great and rare luxury to be sitting quietly and comfortably at a meeting, listening to someone else giving concise, deliberate, unanswerable utterance to views that are one's own. An acutely pleasant sound is the rattle of another's blows on the shields of one's enemies. Such was the joy of listening to Mr. Ramaswamaiya at the College Day gathering, and we are cherishing his speech in this Magazine. With due appreciation of the University's work Mr. Ramaswamaiya mingled many a gentle irrefutable word of warning. He said much of our debt to the Madras University. Forgetfulness of this debt would indeed be a bad thing for this University. We have remarked before that if we in Mysore can evolve as good a university of our kind as Madras for so many years has been of its kind, we shall have reason for pride. Year after year, against continuous onslaughts, Madras has maintained the academic level of a real university. It would not either cheapen or adulterate its degrees. Our debt is to be paid partly in esteem, but mainly in imitation. That our graduates in Arts shall be *graduates*—in *Arts*—depends on a certain stringency of policy that always finds assailants,—stringency in examining, stringency in keeping our courses, and the school courses that lead to them, pure of matter that may be useful professionally but is alien to the cultural training for which alone an Arts course exists. And Madras, though not a teaching university, provided in certain of its constituent colleges permanent lessons for us as to *college* life and administration. Mr. Ramaswamaiya mentioned the Madras Christian College, which has left its imprint on so many Mysoreans. There could be no kindlier college, none in which the student, able or average, meets with more sympathy and encouragement. That is one thing; but at the same time there is that definiteness and inflexibility without which college life becomes formless and weary with indulgence. Nothing of this we must lose, and it is one of the dangers of separation and independence that we should lose it.

We cannot reiterate all Mr. Ramaswamaiya's points, but what he said with reference to intellectual culture should become a sort

of appendix to our Ordinances, a perpetual reminder. He did not in the least undervalue science, and Dr. Coleman, who spoke after him, was at one with him, as one would expect all true scientists to be. The *untrue* scientist, narrow in scope, mechanical in process, nurtured in the shallows and contemptuous of the deeps, dictatorial in all matters because the sort of mastery he knows is a practical, complete mastery—the *untrue* scientist is a perversion fostered by universities against their true nature. To such men applies very precisely the otherwise-meant saying of Hesiod.—“Fools: they know not how much more is the part than the whole.” The true scientist is not like this, for science also may teach a certain self-knowledge, and he who is thus instructed knows and seeks the culture that demands another training. He will not write to the papers damning the Humanities.

Regarding one matter we cannot go all the way with Mr. Ramaswamaiya. He thinks that the fostering of scholarship is the most important function of a university. He would imply that the kind of intellectual culture primarily to be fostered by a university is “learning.” And he commends the German system in which learning is of exclusive importance as against the English system in which the social element (and one might add the athletic element) distracts somewhat from the pursuit of scholarship. It may be replied, first, that in any university the bulk of the students are passmen, not seeking, perhaps not fit for, learning. The university’s duty towards them is certainly not inferior to any other: it is probable that both from the point of view of the state and from that of the average citizen this is its chief duty. The task here is simply to produce a well-developed man, equipped for life’s varied relationships and possessing the personal power and happiness derived from general culture. Measure by this test the products, personal and national, of the German and of the English systems, and there is convincing justification of the latter. The difference in product is, of course, partly due to other causes, but it does illustrate also the narrowness, the lack of flexibility and responsiveness, that result from a too exclusive attention to scholarship, particularly on the part of the average man. In India the average student is even less suited to scholastic studies than elsewhere, because in India the university is the avenue to almost all the “higher branches” of employment. Further, if we think of the man who is by capacity and temper a scholar, will the ends even of scholarship be better served in his case by the English or by the German system? Max Müller said that English scholarship was inferior to German. Certainly there have been, and are, more scholars in



Germany than in England. But will any one maintain that German scholarship is deeper, is finer, than English? An immense fund of personal knowledge of fact is part of scholarship, and the less distracted the pursuit the more of such knowledge will be accumulated. But there is more in scholarship than that. Sanity and depth of judgment, delicate discrimination, the perfectly proportionate view—these are hindered by scholastic reclusion just as human insight is by asceticism. The living man will always be a better scholar, though perhaps endowed with less information, than the fossil. And here again there is special danger in India, where the tendency is for the man of books to care for nothing beyond them.

**THE MAHARANI'S COLLEGE.**—We are writing some weeks before the November Senate meeting, but our readers will know, by the time they scan these articles, what the Senate has decided as to the following motion, which stands in the name of Mr. S. G. Sastry—"That the college classes in the Maharani's College be amalgamated with those in the Maharaja's College." There ought to be an interesting discussion upon this (unless, indeed—what would probably be better in the meantime—it is referred to the Re-organisation Committee). There are obvious arguments in favour of the proposal. The amalgamation would be a very great convenience to the University, and would save a great deal of money. The staff of the Maharani's College is not complete in itself, and a very large proportion of the lecturing is done by the staff of the Maharaja's College. This means much repetition of lectures which seems a waste, and which is certainly a weariness to the professors concerned. It means also, if hours be consecutive, the abbreviating of them by some minutes, because of the distance between the colleges, not to speak of the inconvenience of posting from one college to the other. Then the number of women students is exceedingly small, which emphasises the question whether the inconvenience is worth while. Finally, some would urge that the very principle of the separation of men and women students stands contrary to social progress, while, academically, the women's studies would be benefited by competition, by application throughout of the men's standard. All this may be urged in favour of the motion—which, nevertheless, we feel to be retrograde. Its adoption would mean a very serious set-back for the cause of women's education in Mysore.

The Maharani's College was established as a separate university college, after due deliberation, with definite ends in view. It was

desired that it should be staffed by women, whose work and influence might make a real college of it, with such unity of life as can best be attained in small colleges, and as is attained, in a marvellous degree, in the two women's colleges in Madras. Though it has not yet been possible to staff it thus, the end has already been secured, through the enthusiasm and the unremitting labour of the lady superintendent and the staff. In an earlier issue we wrote of this—of the health and harmony of the collegiate life, of the blending in that college of intellectual and social activity, of work and of play, so that the years spent there are of incalculable value to every student. The outsider knows nothing about this, but the visiting professors know. This collegiate life would at once be destroyed by the proposal, and no sort of gain could ever compensate for the loss. It would be the most cruel of disappointments to the staff to see the destruction of what they have so carefully built up, for it would be the crumbling of an unselfish ideal. There are cases in which convenience and—even at a financial crisis—the saving of a little money cannot be allowed to count. As to the argument that social reform indicates the freer forgoing of the sexes, and the contention that co-education means greater efficiency in women's studies, both are finally answered by the practice of the countries most "advanced" socially and academically. The separate college is the world's way of women's education. Unite the classes, then, and you will save the professors some labour (that, by the way, with some senators would be a decisive argument *against*) and the university some money; but you will wipe out one of the noblest creations of progress and enlightenment in the State.

THE INSPECTOR-GENERALSHIP OF EDUCATION.—After a rather long interregnum Mr. C. S. Balasundaram Iyer has been appointed Inspector-General of Education. Another long period will elapse before these lines reach our readers, yet we would express what we believe is the deep satisfaction of the University at this appointment. Of course we would stoutly maintain that, in general, this office belongs of right to the educational department. That principle is recognised everywhere, and it will be remembered what a storm of indignation burst when, some years ago, it was violated in Bengal. We imagine that our own Government are quite prepared to apply it in all cases where our department can provide one who not merely is able and willing to undertake the Inspector-General's work but also can be spared from, and substituted in, his university work, and where potent special circumstances do not

compel a different policy. The educational situation is more difficult at present than ever before. Government is committed to a policy the administration of which by a tactful Inspector-General will work for incalculable good but every detail of which is fraught with subtle human difficulty. Prejudice could not have been more skilfully allayed or efficiency more certainly secured than by the appointment of one who has been in touch with the new scheme from the beginning, and who is secure against the charge of partiality.

The more strongly, however, would we urge recognition, as a general rule, of the principle we have mentioned. Last year, in his Convocation Address, Sir Leslie Miller spoke words which won our due enthusiasm at the time, foreshadowing that further administrative posts might be thrown open to us members of the educational service—who so well could fill them! So be it, but at present the Inspector-Generalship of Education is the only one, and it cannot be denied that, *ceteris paribus*, the educationist can best fill it. We read—with a certain alertness—Mr. Banerji's words at the recent meeting of the Mysore Civil Service Association.—“I have no doubt in my mind that the Government should continue to look to the permanent band of civil servants for higher administrative functions in all departments, and provide, at the same time, all the requisite facilities for the picked men of the service to acquire the necessary knowledge of technique by special periods of deputation, if necessary to foreign countries and administrations, for training. Experts do not always make good administrators. A happy blending of high administrative talent with a working knowledge of the technique of departments yields, to my mind, the ideal qualification for direction and control. I would therefore advise the members of the Mysore Civil Service to seek every available opportunity they can for specialising in some particular branch of administration. Quite recently the Government of Mysore have selected two of your members for the headship of special departments, *viz.*, Mr. C. S. Balasundaram Iyer as Inspector-General of Education and Mr. D'Souza as Director of Industries and Commerce, and I have no doubt that these appointments will afford you special encouragement in the direction indicated above.” Mr. Banerji expresses this as a personal view, and is never intolerant of disagreement. In the name of the University and the Educational Service we venture to say that the view is in itself unjust and its carrying out would be disastrous. It is true that expertness does not imply administrative efficiency. But it is equally true that expertness does not imply administrative inefficiency, and that is exactly what this view means.

Sometimes it will be necessary to appoint civil service men as heads of the educational department: it was necessary this year. And an educationist should not be appointed Inspector-General unless he is known or presumed to have administrative powers. But to make a principle of appointing others, equipped merely with a "working knowledge" of educational matters and with administrative experience in totally different spheres, would lead to bad administration, and, incidentally, to a situation intolerable to our service.

RABINDRANATH AND "PROSE POETRY."—There are, fortunately, very many people who cannot pen a line of verse; but there is scarcely a human soul who despairs of writing "prose poetry." One of the benefits of the old and true idea that only verse was poetry was that it warned off some of the unfit. They began to come on again with the spreading of the doctrine that verse did not matter. It is, of course, an old doctrine. Sidney and Bacon proclaimed it, and Coleridge declared that "poetry of the highest kind may exist without metre." But popular common sense never accepted this idea. Recently, however, we have been given the translations in rhythmic English prose of Rabindranath Tagore's Bengali lyrics. They were a great gift to us, but they have had one very unfortunate result. "Here," people cried, "are undeniable prose poems, equal in poetic value to any verse. We, by an accidental deprivation of nature, are unable to write a line that will scan, but we are notably conscious that we are poets. We will express ourselves at last. We will write prose poems." It is a ghastly mistake. The translations of Rabindranath's lyrics are not prose poems at all. They are not poems, but faint shadows of Bengali verses, revealing to us something of their beauty and power. There is not one of them that, as it were, exists in itself. These are not what the poet created. Even in the cases where he is himself the translator he has made these things merely as translator, not with the poet's fashioning. It is impossible that in this remaking he should work as poet. The creative act that made the idea made the verse also, and they are inseparable. Verse and verse only sufficed for his utterance in the lyric mood.

Thus those who try to write "prose poems" in the form of the Rabindranath translations are seeking to do what he himself could not. Not being poets, they cannot write poetry, but they can produce a very colourable imitation of this form. It is astonishing how easy it is to imitate. This is partly because of a certain mannerism, and a certain not quite praiseworthy habit of repetition, which, we believe, are found



(2) When I travelled to here and to there, I was tired of thee, O Road, but now when thou leadest me everywhere I am wedded to thee in love.

(3) The immense time lifted me like a wave rolling under a boat ; my mind seemed to raise itself as the swell of the cycles came ; it felt strong with the power of the ages.

“CULTURE.”—We weary our readers, no doubt, with talk of the cultural virtues of what is called “literary education.” But it is necessary to keep this flag flying. We referred recently to a writer in *Indian Education* who emphasised the Indian parent’s startlingly materialistic view of education. No one can deny that the present-day tendency is to think of nothing but the subsequent appointment. Mind and soul are instruments but for this. Even the time spent on physical development through games is regarded by innumerable parents as wasted. The necessary “hall-mark” is all. The ill developed fellow, as seedy in mental process as in physique, can nevertheless “pass and get a job.” What does it matter about the life that is more than meat ? Western countries are railed at for this sort of practicality ; yet here we find it in its crudest form.

The purely practical aim in education is all right in industrial institutes and schools of practical science. But it seeks to dominate the university also, and to discredit that sort of university training which—“leads nowhere in particular.” And it is most contemptuous of the word *culture*. Here are some sentences in an article we read lately—an article otherwise of much value.—

“Culture is to tradition-ridden educationists something indefinable which accrues as a by-product to a man who goes through a course of literary education. The nearest definition—if definition it were at all—of culture that they give is that it is something that remains when what is learned is forgotten (Cardinal Newman). This indefinite nature of culture as they understand it does not take cognisance of the importance of the content of education. The value of culture to them is in terms of mental exercise. Modern psychologists have successfully thrown overboard this ancient theory of mental formal discipline, and established the importance of the content in education. Ancient Socrates and modern James and a host of modern psychologists believe that knowledge worthy of the name is active and dynamic, and its value must be determined in terms of its applicability to affairs of life. It does not require any serious argument to establish that the kind of knowledge that a literary

education is imparting is far from being able to be applied to the practical problems of life with which a boy has to deal in his mature years. The school and the college do not represent even on a miniature scale the theatre of life."

People who can write like this would have no use for a re-incarnated Socrates unless he could teach a trade. Otherwise—let him keep his hands off the youth of the country and keep to himself his imbecile unanswerable questions. "Tradition-ridden educationists" are charged with vagueness in defining "culture." To be sure, some measures will not mete it. No biometric test comes at it, nor will it sell goods or build bridges. It is not, however, a vague thing, nor is it half so theoretic as—for example—modern educational analyses of that mythic entity, "the mind of the child." It should be understood without defining, and has been in all ages until now. But by all means let us, meeting the mood of to-day, apply set terms as well as we can. No doubt a tabular statement will be found most exhilarating. A true training in "the humanities," then, provides—

1. Knowledge of man and of men.
2. Knowledge of oneself, which seemed to the Greeks at least to matter much: knowledge of powers and limitations, of relationships near and remote, trivial and sublime: the energy of confidence, the safety of humility.
3. Both power and security of thought: the impossibility of weak acceptance or of crude and stupid judgment.
4. The exercise and purging of emotion: the burnishing of every faculty: the ability, and the desire, to employ leisure otherwise than in sleeping and feeding.
5. A calmness and a vigour in all tasks, without which technical proficiency is the power of a machine.
6. Manhood, endurance, hope, joy.

Recognition of this potency was at the basis of the old reverence for learning now supplanted by worship of the crude. Matthew Arnold spoke of the new tendency—unjustly enough—as "the Anglo-Saxon contagion," and found America its fostering-ground. America, for all her practicality, is probably as sound spiritually as any country in the world. But because of the very abundance of her life she fosters ill with good, and this contagion is largely of her spreading. Of all diseases it is the least to be welcomed on sacred soil.

## THE GROWTH OF PSYCHOLOGY.

### I

1. *A History of Psychology*.—By George Sidney Brett, Vols. II and III. George Allen and Unwin. 16s net each.
2. *Suggestion and Auto-Suggestion*.—By Charles Baudouin, translated by Eden and Cedar Paul. George Allen and Unwin. 15s net.
3. *The New Psychology*.—By A. G. Tansley. George Allen and Unwin. 10s 6d net.
4. *The Psychology of Day-Dreams*.—By Dr. J. Varendonck. George Allen and Unwin. 18s net.

EVER since the beginnings of philosophy a study of it has been inseparable from a study of its history. The History of Philosophy occupies a foremost place in the curriculum of every course of philosophy, and ever since the days of Hegel histories of philosophy have been neither few nor rare. But a history of psychology did not see the light of day till Prof. Brett of the University of Toronto set his hand to the task. There have of course been books by such eminent psychologists as Villa, Ribot and Stanley Hall dealing with limited periods in the history of psychology, but they have been confined to the psychology of the 19th century. Prof. Brett, however, has covered a wide field very exhaustively. Nearly a decade ago he published his first volume, tracing the growth of psychology from the days of the Greeks to the era of the patristics. The second volume recently published deals with the psychology of the scholastics and comes up to the end of the 18th century and the beginning of the 19th century. The last volume deals with the 19th century, when psychology came to have an importance of its own, and freed itself from metaphysical speculations. It is not surprising if a history of psychology was not missed all these years by the rank and file of philosophy students, and now that it is forthcoming it will not be surprising if but a few people will go through the three volumes from cover to cover. The reason for this comparative apathy is not difficult to find, and it is to be found in a very definite difference between the methods and aims of philosophy, which is metaphysics *par excellence*, and science. Science is confined to the world



of matter and works with observation and experiment. Its theories lend themselves to an easy verification, and thus its history may be definitely characterised as a progress from less certainty to greater certainty, from error to truth. In other words in science a stage once definitely superseded becomes superseded for ever. Progress in science may be slow, but it is sure. Thus it is that we are interested in science as it is developed to-day, and not as it used to be. The history of science is of antiquarian interest only. It is far otherwise with philosophy. It aims at a world-view (*welt-anschauung*). Its attempts to realise its aim far transcend the limits of the material world. Mere observation and experiment do not carry it far. It seeks illumination, and this illumination comes only on the heels of reflection. Of this reflection no objective verification is possible. Its only verification is self-consistency or consistency with experience. This sort of consistency notoriously differs from individual to individual. The truth of philosophy depends on a number of varying factors: individual temperament, racial history, and experience of the age which gives birth to a philosophy. Thus it is that each system of philosophy has its own degree of truth and its own vitality. No philosophy ever developed has completely died. If it has died at all, it is only to rise again decades and centuries later with a new vigour and fresh appeal. This constitutes both the weakness and the strength of philosophic inquiry. It may explain the comparative apathy of the man in the street to philosophic inquiries. But this is neither the place nor the occasion to justify the existence of philosophy.

The foregoing remarks are necessary to a correct appreciation of the place of the history of psychology. For over half a century now psychology has become a specialised study, and there has been a school of psychologists, intent on establishing the claims of psychology as a science, and totally repudiating its connection with philosophy. There is an element of truth in this claim. Psychology to-day has become a unique philosophical discipline. Mere reflection has ceased to count for much in it. It has become experimental to an appreciable extent, while every psychological theory has been subjected to a rigour of observation that would have been undreamt of a hundred years ago. Thus it has become closely akin to science in general both in its aim at exactness and in its method of rigid scrutiny. No wonder if under these circumstances a history of psychology any more than a history of science cannot possibly have that living interest which a history of metaphysical or ethical thought never fails to inspire.

But to say this is only to represent one side of the picture. I hope to show in this article that psychology cannot wholly declare its

independence of philosophy. In so far as psychology remains a philosophical discipline, it must share in the worth of a history of philosophy. If for no other reason, at least for this, Prof. Brett's monumental and scholarly work is bound to prove of inestimable worth to every teacher of philosophy. He himself seems to be conscious of the marked difference between a history of philosophy and a history of psychology, for in his preface to the second volume he uses significant words: "To despise forgotten theories because they no longer hold good, and refuse on that account to look backward, is in the end to forget that man's highest ambition is to make progress possible, to make the truth of to-day into the error of yesterday—in short to make history." This amounts to an admission that a history of psychology does deal with forgotten theories which can never be said of the generality of philosophic theories. But I am not sure if the learned author by using this expression does not do less than justice to his subject, for there has been no philosophical theory which has not been affected by the psychological views of its author. The point is so interesting as to tempt me to linger on it for a while, and show how a psychological theory subsists embedded in a philosophical theory, even though *qua* psychology it has ceased to have any intrinsic worth. In short, whatever utility a mere history of psychology can have, it can only be as a side-help to the history of philosophy, and not intrinsically.

It is in Plato that for the first time in European philosophy we come across psychology in any distinguishable form, though to Aristotle belongs the credit of having penned the first treatise on psychology. Both these great thinkers afford a striking exemplification of how psychology can affect the other departments of thought. It is curious that although all post-Socratic thought was profoundly coloured by teleology—and Platonic thought most of all—and looked at all things as organic wholes, Platonic psychology tended to look upon the human soul as made up of three distinct parts: the rational, concerned with the higher activities of mind; the spirited, concerned with movement; and the appetitive concerned with the mere appetites like hunger, thirst and sex. The appetitive part was looked down upon as irrational and ignoble. The spirited part was regarded as partly noble and partly ignoble since it could ally itself with the rational as well as with the appetitive. In the Republic, as illustrated by the story of Leontius, Plato seeks to show that these three principles are not mere aspects of soul—as modern psychology conceives cognition, feeling and conation to be aspects of consciousness—but three different principles. From a purely psychological stand-point this psychology, based on

an utter discord in human nature, has long since being even up,\* for the conflict among human desires is wrongly conceived as a conflict between reason and appetites. But faulty as this psychology was, it was the foundation of his ethics, where wisdom as the virtue of the rational part is regarded as the basic virtue, and gives to the whole Platonic system a strong intellectualist bias, and it is this bias, which wages an unreasonable war against feelings, that accounts for the utter failure of his Republic as a practical realisable political ideal, and gives to his philosopher king an air of intellectual rigidity, fatal to the complexities and richness of human life.

Aristotle's psychology followed closely in the wake of Platonic psychology. The life of reason and contemplation is conceived as the highest, and we have the splendidly defective portrait of a high-minded man, the very embodiment of intellectual priggishness. The logical climax of this psychology was attained in all its extravagance in the ideal of the Stoic sage, an ideal so high that even the claim of Socrates to it was not above suspicion. Thus the wrong psychology of Plato and Aristotle ultimately worked itself out in many directions as a barren intellectualism.

The birth of Christianity allied itself with the Greek philosophy in its suspicion of appetites, and while exalting emotions took up such an anti-intellectual attitude as to render any progress in psychology, as of philosophy in general, very precarious. The extreme antithesis between body and soul, which its theoretic other-worldliness rendered inevitable, split up an organic unity, which even the Greeks had somehow tended to recognise. This fundamental dualism has been the legacy of the mediæval ages to modern philosophy, and Descartes as the father of modern philosophy had to build his system on a dualistic foundation. His "*Cogito, ergo sum*," the starting point of his constructive thought, was palpably psychological, and yet his psychology was almost of a mythical nature, of which his account of the pineal gland as the seat of soul with its being pushed upwards and downwards by the movements of thoughts is an outstanding example. He went to the length of saying "that the mind can work independently of the brain; for clearly there can be no use of the brain for pure intelligence but only for imagination and sensation." This statement and his conception of

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\* In his *Message of Plato* Mr. E. J. Urwick makes a brilliant attempt to present Platonism as Vedantic, and identifies the three psychological principles of Plato with the three *gunas* of Hindu philosophy: *sattva*, *rajas*, *tamas*. The identification seems to be unwarranted as the Sanskrit terms are primarily ethical, while Plato's discussion of the topic is essentially psychological.

*actus purus* were pure dogmas, unsupported by the phenomena of telepathy and clairvoyance as brought to light in recent years, and it is certainly questionable if these phenomena are entirely independent of brain. Likewise the doctrine of innate ideas suffered from psychological ambiguity in his exposition. Spinoza and Leibnitz made no substantial contribution to psychology, though their metaphysical importance is beyond question.

In England Hobbes started a psychological tradition with its emphasis on pleasure-pain, which cannot be said to have died out entirely even to-day. Frankly empirical, he regards man as wholly selfish and actuated by the idea of his own pleasure, and systematically reduces all emotions, *e.g.* laughter, pity, benevolence, to self-interest, and on this foundation he rears his ethics of selfishness and his politics of despotism. But much more substantial, though equally erroneous, was the psychology of the English empiricists. The premises of Locke with his doctrine of mind as *tabula rasa* and of ideas ultimately developed into the associationist psychology of Hume, which reduced the human mind to a mere stage for impressions to strut about, but did not fail to create an extravagant enthusiasm even years later in James Mill. James Mill taught that all psychical development meant some sort of association and reproduction. But he failed to see that every psychical product does not simply consist of several other psychical factors; on the contrary it is a new product distinct from, and transcending the mere summation of several factors. It is true that white light is a mixture of seven colours, but it would be erroneous to regard it as a mere summation of these seven colours. John Mill recognised this and wrote in his *Logic*: "It is correct to say that the seven colours, when they rapidly follow one another generate white, but not that they actually are white; so it appears to me that the complex idea, formed by the blending together of several simple ones, should, when it really appears simple, *i.e.* when the separate elements are not consciously distinguishable in it, be said to result from, or be generated by, simple ideas, not to consist of them." Hence Mill adopted the use of the phrase "mental chemistry," *i.e.* he thereby sought to emphasise that just as in a chemical product its constituent factors lose their individuality, so in a mental product its constituent factors lose their individuality. But there is a striking difference between the two, which Mill does not see. In a chemical product the constituent factors do not entirely disappear, since a process of analysis can restore them to their original state, whereas in a mental product the constituent factors do actually and totally disappear. As Bergson has once for all shown,

consciousness cannot go back a step or a minute. Each moment of consciousness must be new and must be unique. Thus we see that even in the most considerate and well balanced associationist, associationism showed its hopeless inadequacy. It tended to reduce all mental life to Belief and Habit, to a sort of helpless inertia. Mind as activity was lost sight of and became a riddle of the Sphinx. It was clear that associationism had become insolvent, and necessitated new psychological foundations.

Long before John Mill was wasting his energy in vivifying an impossible psychology, the spirit of psychology had found a congenial soil in Germany. Apart from his effort to raise a metaphysical structure on the triple division of conscious life, Kant showed how mind even when seeming most at rest, is really active, and thus paved the way for all future psychology to develop. Prof. Brett's account of Kantian psychology is very discriminating, and acutely lays bare alike the strength and the weakness of it, when he says: "Kant's psychology, when thus picked out and presented separately, is seen at once to be decidedly meagre. But what it lacks in quantity is compensated by abundant suggestiveness and an almost unlimited power of generating problems." In short, the fact remains that Kant's interest was mainly metaphysical and not psychological.

This cannot, however, be said of Herbart. He was the first great philosopher to have been a great psychologist as well, and especially in the realm of educational psychology his influence was most remarkable. With him for the first time psychology becomes definitely empirical, though its metaphysical foundation as represented by the concept of the soul was by no means repudiated. He was tremendously impressed by the possibilities of psychology; the range of it he regarded as for all practical purposes unlimited and a good deal of it unknowable. The truth of its range has been abundantly brought out by his successors, so that even to-day there remains so much to be known. But whether psychology will for ever contain an unknowable residue is more than one can dogmatise about.

Since Herbart's time psychology has come to have an intrinsic importance of its own, so that it is no more swamped by metaphysics. Of course this age-long tradition cannot be said to have died out absolutely with Herbart. Schopenhauer, Hartmann and Nietzsche, profound students of human nature as they were, were psychologists in a sense, but not in the scientific sense. Nevertheless Schopenhauer especially by his concept of the Will emphasised an aspect of psychical life, which had not always received its due at the hands of intellectualist psychologist-metaphysicians.

Prof. Brett's Vol. III deals with the psychology of the 19th century, spoken of as "Modern Psychology" *par excellence*. Its Part II marks the real beginning of this new renaissance of psychological outlook, and from this point onwards Prof. Brett's work ceases to be merely historical, it plunges into the problems that constitute the very life of psychology to-day. It deals with men, some of whom are in our midst still to-day, while many passed away within the living memory of even the younger generation. The impetus which has revolutionised psychology came from physiology. It would have been a miracle, if such a revolutionary stand-point were placidly accepted by all in the very beginning. Sir William Hamilton could not have been the only one to declare that "no assistance is afforded to mental philosophy by the examination of the nervous system." But time was not distant when James Ferrier's description of psychology as "a spurious and specious science" ceased to have any justification.\* The physiological discoveries of Johannes Müller, especially of the specific energies of the nervous system, and of Sir Charles Bell, especially of the dual nature of the nervous system with a sensori-motor arc as the functional unit of our physiological structure, constituted the foundation on which Weber and Fechner, Du Bois Reymond and Helmholtz, Wundt and Külpe, to mention only a few, were able to build. A close adjunct of the physiological psychology has been the foundation of psychological laboratories and their offshoot: the experimental psychology. In several ways Wilhelm Wundt with his truly German scholarship and the first founder of a psychological laboratory at Leipzig in 1879, has been the most distinguished psychologist of our time.

The desire to make a science of psychology naturally led to an effort to introduce quantitative measurement into mental phenomena. Fechner's name will always be connected with this grand endeavour. The first great outcome of the psycho-physics is the Weber-Fechner Law, which seeks to express a sensation in terms of the stimuli. It was established by several experiments that the ratio of an increasing stimulus differed markedly from the resulting increase in the intensity of the sensation. Weber had the distinction of starting this inquiry, but his work lacked definiteness for want of any standard of measurement.

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\* Prejudices, however, die hard. Mr. Graham Wallas in his "Human Nature in Politics" quotes the sapient remarks of an Oxford don: "Psychology is neither science nor philosophy." But it is the glory of Oxford that it has always been "the home of lost causes and forsaken beliefs and unpopular names and impossible loyalties"—catch-words of course, as my friend Mr. Rollo would say, still not without several atoms of truth!

This was supplied by the genius of Fechner. The unit of mental measurement he found in the *just noticeable difference* between two sensations, for it was discovered that two stimuli of an intensity below the "j. n. d." fail to produce two sensations. He found that while the sensations increase in arithmetical progression, the stimuli have to be increased in geometrical progression, so that we get the formula

$$S = C \log R,$$

where S stands for sensation, C for the constant factor in each variety of sensation, and R for the stimulus, i.e. sensations vary as the logarithms of their stimuli. The Weber-Fechner Law has been important enough to have evoked a vast amount of literature, as it is a fairly good example of physiological and experimental psychology both in its strength and its weakness. The limitations of the law have to be acknowledged. Its application is limited to a very narrow range above and below normal stimulation; the human sense-organs are delicate instruments which require a definite amount of stimulation before they come into operation, while all stimuli above a certain intensity cause a blurred over-powerful sensation, whether it be excessive light, noise or an overpowering smell. Further the just noticeable differences are by no means constant equal quantities of consciousness, but they vary according to interest, bodily health, habit, attention, contrast, fatigue, etc., and thus detract from the scientific rigour of the law. But even the faulty measurement it effects is confined to the intensity of a sensation, and leaves the quality of it out of account. Lastly even assuming the correctness of the law, it is confined to sensations, which by no means exhaust mental phenomena.

These imperfections in their several ways affect more or less all the results of experimental psychology. But to say this is by no means to decry either the worth or the work of this phase of psychology. The remarkable and interesting tests for memory, association-processes, reaction times, and intelligence in general, which have been associated with the names of Wundt, Külpe, Binet, Simon, Titchner, and Myers have been no mean contributions to psychology in general, while they have been of inestimable worth in creating Applied Psychology. Münsterberg's books dealing with the psychology of industry, education, law-courts and medicine have been of great use in establishing the practical worth of psychology. Dr. Myer's last book on "Mind and Work"—an expansion of his lectures on "Present-day Applications of Psychology"—once again and under better conditions brings to the forefront the practical worth of psychology and shows how a psychological expert can be invaluable in organising business. The subject has

now ceased to be confined to the covers of books or the four walls of a class room.

In human nature there has always been an inevitable tendency for a new discovery to be extolled beyond all reasonable bounds by a few enthusiasts. That was the case with physiological psychology. At first it created wild hopes, and it was made to appear as if all the secrets of psychology were to be immediately solved through experiments on brain and the nervous system. The important truth that every psychosis has its neurosis was twisted to mean that every psychosis is nothing but a neurosis. The result was the hollow boastful materialism of Hodgson, Huxley and others of that ilk, the ghost of which has been well laid to rest by Dr. Ward's "Naturalism and Agnosticism." One thing is certainly remarkable that people who have had most to do with experimental psychology have maintained a most balanced view. Wundt's philosophical training made him recognise that "in psychology we find that only those mental phenomena which are directly accessible to physical influences can be made the subject-matter of experiment." So too has Münsterberg kept clear of evolving a mechanical conception of personality and psychical life in general, and we have further the testimony of such an independent psychologist—*i.e.* one who is not a philosopher—as Dr. Myers of Cambridge, who says: "We must regard experimental psychology as but one mode of studying psychological problems, not all of which, however, can be approached from the side of experiment. Far from being independent experimental psychology has arisen as a refinement of general psychology. Familiarity with the latter is essential to success in the former."

In short, after clearly a century of physiological research we are as far as ever from equating the human mind with the human brain. The amount of correlation hitherto actually demonstrated between mind and brain does not bear out the universality of psycho-physical parallelism. In conscious human life meaning is of the greatest importance, and yet this very meaning has no physiological correlate. Wundt, a parallelist himself, is yet constrained to admit the reality of a psychic act as a creative synthesis and that this creative synthesis has no parallel in the brain-processes. He recognises that only the ultimate elements of consciousness have their physical aspects or correlates among the brain-processes, *i.e.* the unitary consciousness has for its physical correlate a multiplicity of discrete processes in the brain. Without the illuminating action of mind, a brain with its localisation however perfected can but present the spectacle of meaningless symbols.



The inherent shortcomings of the physiological psychology can easily account for the existence of psychologists who, while utilising the results of physiological and experimental psychology, yet preserve a certain detached attitude and emphasise introspection as the method of psychology proper. But their introspection has about it a rigour which saves it from being too individualistic. The greatest representative of this school has been the Austrian, Brentano, who has greatly affected English psychology through his marked influence on Prof. Stout. Dr. Ward may also be regarded as a representative of the same standpoint. His famous article on Psychology in the *Encyclopædia Britannica* as well as his "Principles of Psychology" show how far one accustomed to a rigorous analysis of mental phenomena can go, but they also show how such psychology is necessarily confined to the conscious, and how it is apt to over-emphasise the conscious, as if nothing dare exist beyond its charmed circle. Dr. Ward's sweeping condemnation of "mere sensation" as a psychological myth and his known indifference—if not hostility—to the later discoveries known as the psychology of the unconscious, are the inevitable consequences of his rather one-sided outlook. In 1886, when his article was first published, all omission of the unconscious was intelligible, but such omission in a book published three years ago could have only been regarded as a serious defect in an otherwise masterly work, if it had not come from such a veteran philosopher of over three score and ten.

Not the least interesting department of psychology to-day is that of social Psychology. It seeks to study mental processes of men in societies, as represented in the standard works of Dr. McDougall, Mr. Graham Wallas, M. LeBon and others. It has given a great impetus to the study of the instincts and suggestion. As both work unconsciously, social psychology may be regarded as a transition to the more novel and epoch-making work connected with the names of Freud and Jung.

Prof. Brett's historical treatment of Modern Psychology will make his Vol. III a most useful and necessary adjunct to such classical works as those of James, Ward and Stout. In the span of a brief article such as this it has not been possible to do justice to the wonderful richness of the psychological material unearthed during the last hundred years, and still less to the worth of many individual psychologists. This review will have justified its existence, if it tempts some earnest readers to go through the pages of Prof. Brett himself. His volumes represent literally the work of a life-time. It is truly marvellous how in the short

compass of 220 pages he has managed to deal so thoroughly, so impartially, so interestingly with the tangled webs of psychological development till the end of the 19th century. If he has not gone beyond this period, it is because it marks a definite epoch, closing as strenuous an effort as possible made to explore the depths of human mind only through a concentrated study of the conscious. But few can say that this view has given final results. The gentle but none the less scientific satire of Mr. Wallas and M. Le Bon have shattered the fiction of *homo sapiens*, a rational individual so fanatically assumed by most psychologists. But the psychology of the unconscious is still in the stage of formation, and Prof. Brett in his capacity of an historian may well be excused, if he has not discussed this most fascinating subject. But henceforth it will have to be recognised that psychology as a growing science has struck a new vein in an old mine. At present authors like Mr. Tansley speak of it as "The New Psychology." It may not long continue to boast of this title, as "the new psychology" of the 19th century has already become old and found its true level. But that it has solid worth and immense possibilities few persons who have had anything to do with the growing literature of psycho-analysis, will venture to deny, and to this subject we shall now address ourselves.

A. R. WADIA.

(To be continued.)

## THE PHILOSOPHY OF SHANKARA.\*

To the modern student of Indian Philosophy who approaches the subject under the different heads of Ontology, Psychology, Ethics, Epistemology, Logic and so forth, the Editor of the series of Gaeckwad Studies has rendered a useful service by publishing this little manual of introduction to Shankara. The distinguishing merit of the book lies in the careful selection and collation of references, bearing on topics like the above, to the more important of Shankara's works, and for this, the author, Mr. Buch deserves all praise. No exposition, however, of this eastern philosopher from a western standpoint can do justice to him, unless it recognises a fundamental difference between his and western Metaphysics. To Europe and America Metaphysics is still "speculation," a pursuit of the unverifiable phantom called Reality. To many it is even now a "Letting down of buckets into deep dark wells and drawing them empty." But for India Metaphysics—not Theology—means the actual acquisition of what is more substantial, more certain, and more enduring than life itself. Being dominated by this western notion, Mr. Buch's presentation does in some respects fail to convey a correct impression of some of the characteristic tenets of Shankara's Advaita. Nevertheless, he appears to have nearly caught the spirit of this Indian system when he distinguishes it from others in the words, "The idea of absorption in the Absolute is a veritable abomination to the western brain. Personality is conceived to be the highest category known to us. It is, therefore, the essence of ourselves. Hence our distinct personality must survive in any scheme of ultimate redemption . . . The eastern sages consider this stage as a very imperfect one. Personality implies limitation, difference . . . and is incompatible with . . . perfection. But to the western philosopher the soul apart from its life in thought, feeling and willing is an abstraction in a mere x of which we have no idea whatever." Shankara's Brahman, however, does not absorb anything.

Of the seven chapters of the book the best appear to be the second, the third and the fifth, which deal with Advaitic Metaphysics

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\* *The Philosophy of Shankara.* By M. A. Buch, M.A. Gaeckwad studies in Religion and Philosophy: VI. The College, Baroda.

and its relation to other Indian schools as found in Shankara's *Bhashyas*. Chapter V tackles the subject of Ethics. Here Mr. Buch makes a vigorous and rational refutation of the charge that the Advaitic system of thought is fatal to ethical life. The sixth chapter deals with a few points of similarity between Shankara and such European Philosophers as Descartes, Berkeley, Hume, Kant, Spinoza and Bergson. Why Hegel has been ignored here is not clear. The author does not perhaps think much of dialectics, though it plays no mean part in Shankara's system. In a comparative study of this kind the author's omission to discuss why Shankara's Vedanta is characterised by the negative title of "non-dualism," instead of the positive one of "monism," is somewhat conspicuous. And after all, what is the object in instituting such comparisons between him and western Metaphysicians? Is it to show that this Indian thinker also has *erred* in good company? If not, where is the proof that what these men say regarding any vital question is the *Truth*? That is the crux. Evidently to Mr. Buch Shankara is no more than a "speculator," the worth of whose Metaphysics is to be measured, as in the case of his brethren, by the boldness of fancy and imagination displayed in concocting, or (as it is technically put) constructing, *hypothetical* ultimate existences and by the fineness of the verbal or mystical cobwebs woven to prove that they are not unreal. He has not a word to say about the *scientific verification* of their actuality, in making a rational attempt of which nature consists the special feature of this philosopher's system.

The rest of the essay, Chapters I, IV and VII, appears to us to fall below the mark. The seventh chapter in discussing Advaitic Epistemology seeks to support the popular tradition that Shankara's school is ultimately based upon the authority of the Vedas, and in doing so has recourse to an argument as ingenious as fallacious. "The dependence of the Hindu Philosophers upon the Shrutis was to a great extent a dependence of this type." "It would be no less absurd for a Hindu Metaphysician to discard altogether the basis of the Upanishads than for Modern Philosophy to ignore absolutely and completely the whole course of philosophic development from Plato down to Hegel." But does Modern Philosophy take any of the doctrines of Plato and Hegel for absolute truth, and that because it is the inheritor of all the wisdom of a great past? Is it not, on the other hand, a chief characteristic of modern thought to refuse to accept any statement of its predecessors, however great, without challenging its truth? Does any modern philosopher hold even Plato to be infallible? And our author here, when asked what his grounds are for asserting that Brahman is the cause, etc. of this

world, that Brahman and Atman are identical or that there is no Maya in Brahman, directly points to the *infallibility* of the declarations of the Veda in regard to these matters. Nor does he leave us in doubt as to why Shankara had recourse to such "Fundamental assumptions" as Mr. Buch calls them. "He (Shankara) took his stand on them because these appeared to *him* eminently *reasonable*." To every man, be he the veriest fool, the sweet reasonableness of his own beliefs, however irrational, is unquestionable. How is Shankara wiser for manifesting, if he did so at all, such an attitude of mind?

Next, to that central doctrine of Advaitavad, the Maya theory, is rightly devoted a whole chapter, the fourth. But it would have been less disappointing had Mr. Buch stated what "Maya" actually is, even if he did not find it easy to give a convincing proof of the origin of Maya, beyond reiterating, in his own words, the worn out Kantian *dogma* that time, space and causality have no place in the world of Noumenon. Where is the proof that there exists *such* a Noumenon or Brahman? He devotes several paragraphs to bringing out how Maya is said to work and how it is said to cease. But he has not met a single argument of the opponents, who can never be safely ignored when so vital an issue is concerned, and that in a modern treatise. What is worse, he has read into Shankara the western doctrine of the Degrees of Reality, which may be refuted at the very threshold by the well known fact that Shankara's Brahman knows neither degrees nor distinctions, which as he holds no thought can reach. With Shankara it is not Brahman but *Maya* that has degrees. But Mr. Buch is not the only one that has mistaken a doctrine of Ramanuja's for Shankara's. Our author has further erred, but with other reputable writers, in holding that the highest Advaitic knowledge is attained only through mystic processes. "The state of intuition is a 'Unio Mystica' in which all duality ceases . . . It is a state of ecstatic peace." But nothing can be more untrue of Advaita than to say that it seeks final satisfaction in Yogic mysticism. Shankara has most deliberately and emphatically declared his disagreement with the yogic or mystic dogmas, in chapter II of his Bhashya. Even a casual acquaintance with Goudapada would show that the Advaita does not end in mysticism. The Advaitin says to *all* mystics: "Where is the proof that what one sees or experiences in the 'Unio Mystica' is the Absolute Truth, Reality or God?" Where is the proof that such mystics are not *self-deceived*? What a caricature of Shankara it is to declare that he erected his *philosophic* edifice upon the *dogma* of Mysticism! It is only when our eyes cannot bear the sunlight of universal Reason that we seek solace under the

shaded lamp of individual intuition. For it is then that the great truth that Ultimate Existence is beyond the ken of the intellect comes in most handy in drawing a veil over our impotency and in encouraging us to rest upon individual idiosyncracies or communal feelings rather than upon the all-embracing knowledge or Gyan. It is not that mystic experience is false or devoid of value. The path of mysticism is a path open to the million, the pigmies as well as the giants. Its democratic simplicity has a fascination for all. But whither does the path lead? Who shall answer? Who shall say whether the goal reached is the true or the false, unless it be the man of *Reason*?

Turning last to the first chapter and the Introduction, which indicate the general trend of the treatise, it has to be observed that whoever is wedded to the belief that "Philosophy explains both sides of reality, finds out their *harmony* and *reconciles* them in a deeper *unity*" is a disciple of the school of Ramanuja, not of that of Shankara. The Advaitic Reality has no sides or parts or elements to be harmonised or reconciled.

Again, when Mr. Buch holds that the aim of Hindu Philosophy is emancipation from all finite existence, which is fraught with *suffering* (page 33), he misses altogether the standpoint of Shankara's philosophy. The Advaitin neither runs away from pain nor runs after pleasure. The world is full of joy or full of sorrow as one makes it. In itself it is neither. The Advaitic philosopher neither grieves nor rejoices. Some eastern systems have their roots embedded in pessimism. Some Indian and most European schools pride themselves upon the sanity of their optimistic reading of the world. To Shankara the pleasures of the world have no higher value than its pains, though they may serve different purposes.

"The method of Hindu Philosophy," says the author, "is the *a priori* method by which we proceed from the whole to the parts, not the empirical one of rising from the parts to the whole." "This is the method of Shankaracharya." But this, it must be emphatically said, is *not* the method of Shankaracharya, though it may be that of Badarayana. Shankara's *philosophic* method is evident in his *Introduction* to the Bhashya on Badarayana Sutras. Shankara, however, does not reject the dogmatic method of the latter in so far as it serves a useful purpose. To refer to an instance, Mr. Buch devotes considerable space to proving that Shankara holds that "the Vedas are claimed to be our only authority in matters of such fundamental importance as Atman." Here our author has, unfortunately, placed the emphasis on the wrong word and lost the clue to the real import of Shankara's argument.

When Shankara says (and he repeats the view in a hundred places); "Through scripture alone as a means of the knowledge, Brahman is known to be the *cause* of the origin, etc. of the world," the stress is to be laid not upon *Brahman* but upon *cause*. Not one of the passages quoted by Mr. Buch in this connection appears to us to be relevant to the point at issue. For it is with respect to the "*cause* of the origin, etc. of the world" that the Shastra is the sole authority and that one has to accept the *dogma* that Brahman is the cause, etc. of the world, if one is to follow Badarayana.

We do not blame Mr. Buch for these and similar inaccuracies. No one who is obliged to rely upon verbal interpretations of Shankara can escape them.

Lastly, our author's choice of English equivalents for Sanskrit words has sometimes led him away from the truth of Advaita as it appears to us. For instance, in trying to oppose the view that Shankara's ultimate court of appeal is reason, he says "This (intuition) is the high-set ground upon which all our knowledge of reality is based." But Shankara's Reason does not exclude "Intuition." Mr. Buch evidently mistakes "Tarka" for "Reason." Shankara's Reason covers more than what is known as Logic in the west and more than the "Tarka" of India. It is based upon "experience in its totality," i.e. *Anubhava* as it is termed, which is the last word in Shankara's disquisitional Philosophy.

V. SUBRAHMANYA IYER.

## A BOOK ON HINDU ETHICS.\*

IN treating of the ethics (ethos=manners, usage, customs) of a people as a distinct branch of study it is usual to expound the psychological and metaphysical principles on which the moral judgments of right or wrong and good or bad are based. This is what is called the scientific treatment of the subject. Contrasted with this method, there is another method called the historic or evolutionary method, according to which the gradual changes in the moral judgments of a nation or people on its own acts, motives and ideas, are traced stage after stage from its infancy or tribal state to its civilized state. Besides these two methods there is also a third way of dealing with the subject. It is to make a comprehensive collection of the moral precepts of a people, showing the particular acts, or ideas which are regarded as good or bad or as right or wrong, with no reference to any scientific principles underlying those judgments. In this charming book all the three methods are employed.

In the first chapter entitled "The Hindu View of Life," the author speaks of different systems of ethics, such as the Buddhistic, the Hindu and the Greek. If ethics be regarded as a science, there is no reason in speaking of it as varying with nations. There can never be as many sciences as there are nations. Just as the various scientific truths and theories are one and the same for all nations, so ethical truths, such as honesty, chastity, piety must necessarily be the same for all. There cannot be two truths, one European and the other Indian. There may, however, be, indeed there are, different social standpoints from which acts, motives, and ideas may be regarded. According as the standpoints differ, moral judgments of acts, motives, and ideas will also differ. Still the basic principles of morality remain unshaken. For example, the Mīmāṃsakas look upon life as pleasurable, while pessimistic Jainas, Buddhists, and Vedantins regard life as miserable and wholly devoid of pleasure. Accordingly the Mīmāṃsakas, the followers of the Vedic School, commend all approved individual or social acts as Dharma or good, while the pessimists condemn all worldly activity as baneful and leading to birth and misery, and therefore commend Nivritti

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\* *The Principles of Hindu Ethics.* By M. A. Buch, M.A. Arya Sudhakara Press, Baroda, Rs. 3.



or cessation of all activity as the highest Dharma or good. All the same they extol commercial truthfulness, sexual chastity, filial piety and other secular virtues as inviolable moral duties. So long as they have to do with the world, their highest Dharma, which is after all a charming ideal, must yield to the worldly Dharma or social good. It seems to follow therefore that though the Hindus, the Buddhists, the Jainas, the Greeks and others differ from each other in looking at life and life's activity in this world from different standpoints their Vyāvahārika Dharma, social morality or social ethics as contrasted with their religious or idealistic ethics must be the same.

It is highly necessary to distinguish between what is purely ideal and what is matter of fact. The phenomenal existence of the world is an ideal and not a gross matter of fact. Under the conviction that the world is *Maya* or illusion, no philosopher is found to deny his mortifying tooth-ache. Accordingly the learned author's attempt to explain away the problem of evil by the *Maya* or phenomenal theory of the Advaitic philosophy does not seem satisfactory.

Coming to the second chapter, entitled "Criteria of Morality," the author's reference to the Vedic Rita, a mysterious force believed to regulate the periodical movements of natural phenomena, as a basis of moral principles, is beyond comprehension. Among other essential principles revelation as a source of ethics, the practice of the best people as guidance, the welfare of humanity as an end, intuition for conscience as a source, are all too well known to need explanation.

Coming to the conclusion that there can be no absolute good or bad, our learned author says that all moral ideas are relative, and bases the Hindu idea of relativity of ethics on what is called Apaddharma. The word Apaddharma means a less stringent duty or act which a man in distress can more rightly observe than under favourable circumstances. For example a Brahman whose duty it is to earn his livelihood from teaching, priestcraft, or alms in favourable circumstances is allowed to take agriculture or trade as a means of subsistence in times of distress. This is rather adaptability than relativity of ethics. It is however true that ancient Hindus found it difficult to arrive at a satisfactory definition of Dharma or good and said that Dharmasya tatvam nihitam guhayam, true nature of Dharma is hidden in a cave. This conclusion is due not so much to the notion of relativity of ethics as to the variation of moral judgments passed on similar act in different times, places and circumstances.

In chapters III, IV, and V, the author gives us an interesting account of the views held by the ancient Hindus on specific instances of goods and bads. Chapters VI—XII are devoted to the description of domestic

ethics, and are enriched by quotation of elegant sayings from the Vedas, the Upanishads and the Epics.

In chapter XIII, entitled "Ethics of the State," the author confines his attention to the ethics of monarchy, and dwells only upon its bright side, taking no notice of its ugly aspects. Even in describing the ethics of war he has omitted to notice the treacherous acts committed in the wars described in the Epics.

Chapter XIV is devoted to the description of what he calls caste-morality. There seems to be no logic in bringing the origin of castes and the privileges of Brahman and other castes under ethics.

The author's view on the advantages of caste are questionable. He says that "its service is the organisation of society on the spiritual basis." Why not on a selfish utilitarian basis, as many a non-Brahman in Southern India would say? The fact is that caste is neither a divine creation nor a human organisation on any basis. It is merely an evolutionary product like many other social institutions. Prior to the rise of Buddhism and Jainism in India, the people of India were divided into four classes, namely, the priestly, the ruling, the trading and the serving classes, as among the Zoroastrians and perhaps the Greeks also. With the rise of Jainism and Buddhism, the Hindus in their own self-interest had to tolerate the apostates and maintain their own supposed religious purity by avoiding intermarriage and interdining with them. The two legs on which caste stands are avoidance of intermarriage and interdining with those who are believed to have fallen away from caste or to have belonged to a different race or society. There is no evidence for its organisation on a spiritual basis. "Another service," says the author, "is the systematic distribution of functions." A third service, in his view, is that "it is a great safeguard against all foreign government." Others may assert that quite the opposite is true.

The passages which the author has quoted in praise of friendship, hospitality, charity, Ahimsa, and humanity in chapters XV—XIX, and in condemnation of anger, ambition, and other vices in chapter XX, are all very interesting. The last three chapters on Sannyasa, renunciation of the world, fate and free will, and theology and metaphysics do not seem to have any close connection with ethics proper, though they may exercise some influence, good or bad, on the moral life. On the whole, the book, affording as it does interesting and instructive reading, is a good contribution on the subject.

R. SHAMA SASTRY.

## FROM HUME TO GREEN.

### (V) THE CLASSICAL ECONOMISTS.

"THE foundations of England's industrial greatness," writes William Clark, "were cemented by the blood of the English working classes." It is melancholy to record the fact that this tragic spectacle failed to inspire any worthy protest from the utilitarian thinkers. On the contrary the political economy which grew up in this period under their influence enunciated a number of so-called *laws* which logically led to the fatalistic conclusion that owing to the operation of certain economic forces all attempts to improve the condition of the working classes were bound to fail.

Adam Smith taught that freedom of trade and industry was the best stimulus to production. This principle was applied by his followers to the relations between capital and labour, without, however, those reservations and qualifications which marked Adam Smith's treatment. The practical good sense of Adam Smith recognized that the labourers could not expect to compete on equal terms with their employers, and in a well known passage he points out that the masters are always in a sort of tacit but constant and uniform combination not to raise the wages of labour above the actual rate. When in 1799 bills were introduced in parliament to make combinations among workmen illegal, the authority of Adam Smith was quoted by those who objected to the principle of these bills. In spite of this, Combination Laws of a sweeping character were passed by parliament, and it required years of strenuous agitation to get them repealed. Adam Smith again was always in favour of liberal wages for workmen. "The liberal reward of labour," he says, "as it encourages the propagation, so it encourages the industry of the common people. The wages of labour are the encouragement of industry, which, like every other human quality, improves in proportion to the encouragement it receives." His followers, however, leaned towards low wages, and under their influence the dogma of cheap labour as the best incentive to industry, and as essential for the commercial supremacy of England, came to dominate the thought and practice of the business world. "Upon the whole," said an employer, "we may fairly aver that a reduction of wages in the woollen manufactures would be a national blessing and advantage and

no real injury to the poor. By this means we might keep our trade, uphold our rents, and reform the people into the bargain." \* If ever there was a piece of legislation which was in flagrant violation of the express teaching of Adam Smith, it was the Corn Law of 1815. This was passed at the instance of the landlords, who saw nothing objectionable in trying to deprive the working classes of the protection of the state. The manufacturers, while professing homage to the principle of freedom of trade, did not scruple to seek the help of the legislature when their interests were threatened by foreign competition. In short the ruling classes borrowed the teaching of Adam Smith when it served their interests and unhesitatingly threw it overboard when it did not suit them.

It is interesting to note that a widely different interpretation was put on Adam Smith's teaching by the remarkable group of early English Socialists. The most original of these, Thomas Hodgskin, was a devoted follower of Adam Smith. He adopts Smith's distinction between human institutions and the natural order of things, and uses it as a challenge to the whole foundation of the existing system of the law of distribution. "That great man," he says, "carefully distinguished the natural distribution of wealth from the distribution which is derived from our artificial right of property. His successors, on the contrary, make no such distinction, and in their writings the consequences of this right are stated to be the laws of Nature." According to Hodgskin, labour is the main source of wealth but under the division of labour the workman is deprived of the natural reward of his labour. Capital is the product of labour, and profit is nothing but a portion of that produce, uncharitably exacted from the labourer. In fact the exactions of the idle capitalist are the main cause of the poverty of the labourer. The law of the land is so contrived as to secure wealth to the land-owner and capitalist but not to the labourer. "The law of nature is that industry shall be rewarded by wealth, idleness be punished by destitution; the law of the land is to give wealth to idleness and fleece industry till it be destitute." Hodgskin was, however, no revolutionary. He did not really wish to destroy, but to reform, the law of property. "Amend the laws as to property," says Foxwell, "for all the crimes which afflict society grow from them."

In the year 1798 was published Malthus's treatise on the Law of Population, one of the landmarks in the history of economic thought.

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\* See *The Evolution of Modern Capitalism*, by J. A. Hobson.

It arose out of the controversies which he had with his father, who was an ardent believer in the doctrine of the perfectibility of man as taught by Condorcet and Godwin. The close of the 18th century was marked by a sanguine faith in human destiny, and this faith found its noblest utterance in Condorcet's famous work on the progress of the human mind. The circumstances under which this work was composed are truly remarkable. Being elected a member of the famous Revolutionary Assembly, Condorcet brought on himself the vengeance of the Terror for his courageous denunciation of the methods followed by Robespierre and his followers. He was charged with conspiring against the liberties of the kingdom, and was condemned in his absence. A noble Frenchwoman, at the risk of her own life, gave him shelter in her house. Separated from his wife and child, tormented by the fear of bringing down destruction on his benefactress, and with the vision of the guillotine before him, Condorcet sat down to the composition of his work; and when it was finished he fled from the place. Well may Lord Morley exclaim that among the many wonders of an epoch of portents this feat of intellectual abstraction is not the least amazing. The noble words with which Condorcet concludes his essay deserve to be quoted. "How this picture of the human race freed from all its fetters, withdrawn from the empire of chance, as from that of the enemies of progress, and walking with firm and assured step in the way of truth, of virtue, and happiness, presents to the philosopher a sight that consoles him for the errors, the crimes, the injustice, with which the earth is yet stained, and of which he is not seldom the victim! It is in the contemplation of this picture that he receives the reward of his efforts for the progress of reason, for the defence of liberty. He ventures to link them with the eternal chain of the destinies of man. It is there that he finds the true recompense of virtue, the pleasure of having done a lasting good. Fate can no longer undo it by any disastrous compensation that shall restore prejudice and bondage. This contemplation is for him a refuge into which the recollection of his persecutors can never follow him; in which, living in thought with man reinstated in the rights and dignity of his nature, he forgets man tormented and corrupted by greed, by base fear, by envy. It is here that he truly abides with his fellows, in an elysium that his reason has known how to create for itself, and that his love for humanity adorns with all purest delights."\*

Condorcet bases his expectations for the future on the establishment of equality of rights and freedom for the whole human race. The

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\* Morley, *Critical Miscellanies*, Vol. II.

Revolution had proclaimed this equality, and it was the task of the 10th epoch to realize the idea. The elimination of all inequalities of wealth, sex and instruction will make possible the substantial perfecting of man. Political liberty will become the birthright of all nations, and there will be universal peace. Progress in the art of medicine will even prolong the term of man's life.

In England Godwin, who owed to French sources his faith in the unlimited possibilities of human improvement, indulged in similar visions, and drew the picture of an ideal society in which all will share alike the bounties of nature. Selfishness will disappear, and every member of the community will identify his interest with that of others. Half an hour's daily labour will suffice to secure the necessities of life, and thus everyone will be free to devote himself to intellectual work and the practice of virtue.

It was reserved for Malthus to show that these glowing anticipations overlooked a factor of cardinal importance, the dread problem of over-population. He drew attention to the fact that population always has a tendency to press beyond the means of subsistence, and that this tendency is kept in check by vice, misery and moral restraint. It followed that man could procure sufficient food only on terms which preclude comfort and happiness. Malthus clothed his proposition in a formula which appealed powerfully to the popular imagination,—that population, if unchecked, increases in a *geometrical* ratio, and that food, even in the most favourable circumstances, increases only in an *arithmetical* ratio. It soon became the fixed belief that pressure of numbers on the means of subsistence must be the normal condition of the majority of the race, and that in consequence a life of poverty must be their habitual condition; for it was not the institutions of a country but Nature herself that doomed them to this condition. It is no wonder that this dreary doctrine shocked generous minds, and that the poet Shelley declared in his preface to *Prometheus Unbound* that he had rather be damned with Plato and Bacon than go to heaven with Malthus. It soothed the anxieties of the rich. "The doctrine that poverty was inevitable and incurable," says Hammond "put a soft pillow under the conscience of the ruling class." If every increase of comfort brought forth an increase of population it was clear that there was no need for their interference. A distinguished theologian, Chalmers, after reviewing *seriatim* all the schemes proposed for the improvement of the economic condition of the people, expressed his considered opinion that none of them would succeed, since an increase of comfort would lead to an increase of numbers, so that the last state of things would be worse than the first.

Ricardo belongs to the school of Adam Smith, whose principles he professed to develop. His book, *The Principles of Political Economy and Taxation*, has had a curious history. Contemporary thinkers and politicians found it an admirable aid in justifying the existing system, and deprecating all interference by the state to modify that system. On the other hand it furnished material for the revolutionary gospel of advanced Socialists. Lassalle's "iron law of wages" and Karl Marx's theory of surplus value are alike based on Ricardo's analysis of value.

It has been remarked of Ricardo that he moved in a world of abstractions. This is far from true. His whole system was based on the observation of the contemporary state of things. His error lay in the fact that he generalized on those facts on the assumption that they would remain valid for all time. He was the interpreter of the new industrial world, the foundation of which was competition. "Steam had been utilized, machines were supplanting hand labour, working classes were migrating to new centres of production, guild regulations were giving way and competition of a type unheard of before was beginning to prevail."\* Ricardo realised this situation with admirable insight. His treatise is penetrated by the idea of competition, on the basis of which he works out his theory of distribution. Further, the idea of natural law was the dominant conception at that time, and Ricardo believed that the law of distribution which he worked out was of unvarying character, and was unalterable by human endeavour. Two further assumptions underlay Ricardo's treatise: (1) that every man knows his own interest and is capable of pursuing it, and (2) that the economic interest of the individual is identical with that of the community. Lastly, he was too much in the habit of laying stress on the production of wealth and ignoring the human element in it. In an interview with him Sismondi was constrained to remark,—“What! Is wealth then everything? Are men absolutely nothing?”

We are, however, concerned in the present connection not with Ricardo's economic theory as a whole, but with his famous theory of the law of wages, from which the contemporary world drew such startling conclusions. "In every sort of occupation it must come to pass," says Turgot, "that the wages of the artisan are limited to that which is necessary to procure his subsistence." Adam Smith rejected this teaching of the Physiocrats, but Ricardo accepted it and naturalized it in England. He laid it down as an axiomatic truth that under a system of free competition wages would inevitably tend towards a minimum, so

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\* J. B. Clark.

much as will supply the bare necessities of life, and that no human efforts could check this tendency. There was a justification for this doctrine in the circumstances of the first quarter of the 19th century; wages had fallen very low, and, in the absence of effective organization on the part of workmen, it seemed as though this was the natural law. The error of Ricardo consisted in the fact that he assumed that the state of things which he saw around him would continue for all time, and did not realise that it was possible for combinations of workmen to raise their wages. He was himself a political reformer, and helped in the repeal of the Combination Laws, but his enunciation of the subsistence-wage doctrine had a most unfortunate effect, as it gave rise to the fatalistic view of the condition of the working classes that they were destined by inexorable circumstances, which human agency could not control, to remain weak and miserable.

It is not difficult to understand that, with these principles, the classical economists did not support any attempts to improve the factory life. Ricardo himself supported the manufacturers in their opposition to the Factory Acts. Another distinguished economist, Senior, in opposing the Ten Hours Bill, attempted to show that the whole profit of the manufacturers is derived *from the last hour*. And, strange to say, every endeavour to reduce the working hours in the factories encountered violent opposition from John Bright. In 1831 a society with Lord Brougham as Chairman, and an influential committee which included Ashley, Russell, Denman, Hobhouse and James Mill, was started with the object of spreading useful knowledge among the working classes. The society published two books, *The Results of Machinery* and *The Rights of Industry*, which point out, among other things, the function and importance of capital in the production of wealth and the supreme interest that labour has in the protection of the rights of property. The working classes are further warned that combinations for raising wages constitute the chief menace to security of property. "When there is too much labour in the market and wages are too low, do not combine to raise the wages; do not combine with the vain hope of compelling the employer to pay more for labour than there are funds for the maintenance of labour; but go out of the market. Leave the relations between wages and labour to equalize themselves. You can never be permanently kept down in wages by the profits of capital, for if the profits of capital are too high, the competition of other capital immediately comes in to set the matter right."

On the whole the influence of the classical economists was disastrous to the best interests of the nation. It paralysed state action, and



damped the effort of social reformers. It was mischievous in the highest degree, as it gave the capitalists an excuse for disclaiming all responsibility for the misery of their operatives. "It was unfortunate," says Cunningham, "that the most advanced science of the day should insist on free play for the capitalist, as a right, while it provided him with excuses for neglecting his responsibilities." No wonder Political Economy came to be dubbed "the dismal science"

N. NARASIMHA MOORTHY.

*(To be continued.)*

## CO-EDUCATION.

THE education of men and women at the same college is a stirring topic of the day. The subject is being raised again and again, and "co-education" is held like a dangling sword over the Maharani's Women's College.

The root question to ask ourselves is—"With what object was the college first begun?" The only answer to this seems to be—"That the women of Mysore might be given equal chances with the men in the pursuit of knowledge and in the attainment of culture." It is three or four years since the college was started, and the accusations brought against it now are that the expected increased numbers are not to be found, and that its upkeep is an unnecessary item of expenditure under the retrenchment scheme. Hence the cry—"Let there be co-education, let the men and the women be educated at the same college."

But, there are certain points to be considered. Millions and millions are spent, without any compunction, on the cause of men's education. Should an iota of these millions be grudged in the cause of the women? Woman has her own special niche in the world, and her own individuality to develop. Education must mean the perfecting of the nature of the individual, whether in man or woman, and not merely the passing of examinations leading to the obtaining of degrees; and there is no chance for an Indian girl to develop her personality in a men's college. Taken from the seclusion of a home where she leads a desultory life in her own shy corner, with no society but that of her own sex, is she to be thrown into the circle of men students, who have not yet learnt to offer her the right hand of fellowship as to a comrade? A women's college affords Indian girls security from the too inquisitive public gaze, and allows them freedom happily to pursue their intellectual and social life. At a men's college, the life of the women students is narrow, and hemmed in by conventionalities which may not be broken, while recreations and out-door games, a free use of the library, college clubs, musical, literary and social, debating societies and entertainments is entirely out of the question. Except in the intellectual development gained by attending lectures in class-rooms where they feel entirely out of their element, they do not reap the benefits of a liberal education. Women's colleges, suitably and beautifully equipped, have a strong hold on their students. All who

have lived and studied at any really fine women's college can testify to its charm, and to the influence it exerts on the character. Its memory clings through the years, and will always be reverted to and dwelt upon with a peculiar happiness. To an English girl college life is a glorious period of existence. It is the time when, fresh from the narrower sphere of school, she gets her first glimpse of the realm of womanhood, and the long vista of possibility is wondrously fair. She sets to work to develop all sides of her nature with energy and determination, and she throws herself with zest into all the college activities. She acquires a sense of her wider work and responsibility, and that broad-minded sympathy which is ever ready to take an intelligent interest in all the pursuits, successes and failures of those around her.

Our girls know not the irresponsibility of girlhood nor its delightful and infectious buoyancy. They are either wives, with their load of cares and duties, or widows, who by their misfortune have lost their social standing. To such girls a women's college is a real boon. They love to belong to it, since it affords them many new interests. The various pursuits bring a joyousness and delight that sets aside the innumerable little vexations at home, and through several channels new ideas flow in, which help them to realise their womanhood. The girls that were so stiff and shy at the beginning are now learning to understand the real meaning of college life, and its delights.

Again, in a society that prohibits the lady of the house from entertaining her husband's men friends, and *vice versa*, the very idea of the woman being educated with the men is unpleasant, to say the least of it. In a society where most of the women students who go in for higher courses of study are wives and mothers, the very thought of co-education is preposterous. It is with great difficulty that the guardians of the girls, whether parents or parents-in-law, can be persuaded to allow the girls to go beyond the lower forms even in girls' schools, and if the present women's college is abolished, the education of women will receive a terrible set-back.

Even in places where women are free, and, standing on the same level as men as their comrades, help shoulder to shoulder in the political, economic and social life of the country, women's colleges are recognised as necessary elements in a standard educational system. Much more urgent in our country is the necessity for women's institutions, whether educational, medical or technical. The Indian woman is considered to be so submissive and meek that she is quite content to take a back seat, to stagnate and deteriorate, while the men pursue their avocations and enjoy their amusements and their clubs, quite apart

from her. Each lives a life of his or her own interests, with very little in common. Nothing is done to brighten the woman's life, and in most cases even education is not allowed—there are so many orthodox families, even in an enlightened State like Mysore, that stop their girls' schooling at quite an early age. Hence the women have not even the capacity to construct the "home beautiful," or to make home life the centre of attraction, or to train the hope of India to become balanced and steady-minded citizens, or to go forth into the by-ways of humanity as angels of comfort and consolation to their weak and heart-broken sisters. There is plenty to do, and some are doing it. But more are wanted, well equipped and well trained to bear the heat and burden of the day, to soothe, cherish, comfort and encourage, and to love and sympathise. It is only through an education that fits them for this that our girls will learn to realise the true and grand meaning of womanhood, and will assert their true claim to the chivalry and worship of man.

H. S. HENSMAN.

## AN ADDRESS TO THE UNIVERSITY UNION.

(For this report of the memorable address delivered by Mr. G. N. Chakravarti, Rai Bahadur, Vice-Chancellor of Lucknow University, in the University Union, Mysore, on October 4th, we are indebted to *New India*.)

FOR years past I have been wishing to visit this University, and that for various reasons. In the first place, this is the first University started by an Indian State. You have a competitor in the new Osmania University of Hyderabad. But then, that is more or less in the nature of an experiment—an experiment which, I admit, is fraught with immense possibilities, but which, after all, is problematic in its nature; and the results of that experiment lie in the womb of futurity. The second reason why I wanted to visit this University is that it really is the first purely teaching University that has been started in India. The Benares Hindu University ran it very close, as, I believe, it was started within a few months of the starting of this University. The third reason is that, before the Sadler University Commission met in India and made its recommendations, indeed long before that, you had adopted the principle of having a whole-time Vice-Chancellor—a Vice-Chancellor who would no longer be the distant dispenser of the destinies of a University, but the living heart and head of the University, and who would become really the centre of all activities. The fourth reason why I wished to come here was that you had just started a system of tutorial and similar work, which, I believe, must be the distinguishing feature of the future universities of India. The fifth reason is that I had always heard of the First Grade Women's College—the Maharani's College—which, I think, is a worthy co-adjutor of the Maharaja's College belonging to the University. The sixth reason is that I had also heard of the fame of that great institution, which is a source of culture for the whole of India, the Oriental Library, which, I believe, is now working under the *aegis* of this University.

The last, but not the least reason, I may say, is that I wanted to see this Union, to which you have done me the honour to invite me this morning. To my mind, this Union strikes the keynote of the future tone of university education. I am not one of those who belittle the

work done by the older universities. They have done monumental and magnificent work towards raising the intellect and culture of the Nation. But it has to be admitted that, owing to the limitations of their constitution and the conditions of their being, they have not been able to do so much in the way of research work and of directly influencing the moral and spiritual culture of the students of the university. The function which these modern universities are going to perform is to emulate the past, and thus to make the universities, once more, real centres of learning, like Nalanda of old, or Taxila, or Cordova, or Baghdad. We shall have, I hope, at these centres of learning, teachers—Acharyas and Gurus—who will not only by their direct teaching but by their silent influence improve the intellectual stamina of the students. There is no doubt that your Vice-Chancellor, being a person of great learning and eminent scholarship, will draw round him a group of teachers of the right stamp. But their mere presence, although inspiring and helping to raise the ideal of university education higher than that which has obtained in the past, would not be fully effective unless opportunities of social intercourse were afforded. The four walls of the class-room certainly do not afford the necessary opportunity for the professors and students to come into that intimate contact which alone can make it possible for the influence of these great Acharyas and Gurus to permeate into the innermost recesses of your being. You want something more than that. You want social intercourse, and that, I believe, this Union is now going to provide. Apart from this social contact, I think that your Union has to perform another very great function.

It is the place where you can have free intercourse of thought, where you can have, to an unlimited degree, “the feast of reason and the flow of soul.” I do not know what the policy of this University will be. But I have always believed that politics should not be boycotted in educational institutions. I find from your curriculum that Politics finds a place in the courses of studies prescribed by the University, and I do think that it is the sanest thing for a country to allow freedom of political discussion in university institutions, because it is only by free discussion that the other side of a particular problem is presented, and political propositions are scrutinised in the light of the academical training that is received in the university. I think that if politics is allowed freedom of access to the University, our young men, to whom I am now speaking, will not fall an easy prey to the blandishments of political mountebanks, who offer all kinds of nostrums for your political salvation. Now it is the boycott of titles, and then it is the boycott of

services. Now it is the boycott of all foreign things, and then it is the boycott of all colleges and schools.

Now, gentlemen, Nationalism is a high ideal, and we all strive to follow that ideal. But Nationalism is not the last word in altruism. There is something greater than Nationalism. We admire Nationalism precisely because it gives us some opportunity for service. Humanity is distinguished from the brute world by its capacity to make sacrifices for others. The struggle for existence is the law of the beast, and sacrifice is the law of the Gods. It is this that makes us admire Nationalism, and, as I said, there is something greater than Nationalism. Intellect rises above the limitation imposed by politics. Intellect recognises no barriers of caste, creed or geographical limitations. In the world of intellect, there should be the freest intercourse possible. I do not think that any boycott is more withering and more devastating to soul life than the boycott of intellect. Intellect brings the whole of humanity into one group, and we have to derive knowledge from every possible source. And, rising still higher—because I believe there is something greater than intellect—you find the unity of all life, and you begin to recognise the animal as your younger brother, striving to rise higher in the scale of evolution. Going down, we find the same striving in the plant life and even in inanimate beings. This is the great doctrine preached by our Rishis of old, and this is the doctrine which is now being justified in the eyes of the modern world by our great countryman, Sir J. C. Bose. Do you think that this doctrine would have found the same recognition if it were merely preached by the pandits, who believed it as an article of faith? Do you not think that the confirmation of this doctrine accomplished by approaching it through the avenues of modern science and learning claimed the homage of the western scientists and learned men, and shed lustre upon the glorious traditions of your own civilisation? Have knowledge from all sources, and profit by that knowledge—this is my earnest advice to you.

I find that you have adopted in this University the motto, "There is no greater purifier than knowledge," from the *Gita*, and my prayer is that *gnanam*, knowledge, may in its fulness and beauty burn up all that is base and imperfect in your nature, and purify your heart and soul, so that they may ever seek expansion instead of contraction, co-operation instead of isolation, love instead of hatred, and ever strive to find unity of life amidst the diversity of the phenomenal world, so that you may develop in you the noble virtues of reverence, charity and worship.

## MYSORE UNIVERSITY: A COLLEGE DAY COMMENT.

(These paragraphs are taken from the speech made by Mr. B Ramaswamaiya, B.A., B.L. in proposing the Toast of the University on the Maharaja's College Day, October 16th. *Vide* Editorial.)

THE days of discussion are over, regarding the type of university, "examining" or "teaching," suitable for the land, and it is now acknowledged that the large "examining" type of university must give place in India to smaller and more efficient teaching and residential universities. While we were conscious of the splendid work of the Madras University, and the great benefits derived by Mysore by the affiliation thereto of its two colleges for over twenty-five years, there was an increasing feeling in the State that it should have a university of its own. The creation of the Mysore University was due to a recognition of this feeling, and to the prompt action of our administrators in accordance with the new policy in favour of smaller and more compact universities of the unitary type.

The association of Mysore with Madras for many years had been so close and so beneficial that it was not without a sense of regret that the tie was broken five years ago. But this was naturally combined with a sense of great joy at our embarkation on a separate existence of our own. The speech of His Highness the Chancellor at the opening of the first Senate meeting gave beautiful expression to both feelings, when His Highness said,—“I think we all realise the solemnity and importance of to-day's ceremony. It marks an epoch in the development of education in the Mysore State ; for what should be more significant in our history than the creation, at the express desire of the people, of a National University. I feel that, on this occasion, I should publicly state how great is the debt of gratitude we owe to the University of Madras, under whose fostering care both the constituent colleges of our University have attained their present high state of efficiency. Nearly all our most distinguished Mysoreans owe their education to the same University and are justly proud of the connection. Our University may fitly be compared to a child, which reaches years of discretion, and leaves the parental home to establish one of its own with a grateful memory of its happy childhood.” Beautiful sentiments these, which convey our indebtedness to Madras, and those of us, particularly, who



have sat and learnt at the feet of those most worthy and excellent professors in the two premier colleges, the Christian and the Presidency, know, in a special measure, how much we owe to those colleges and to that University, and how proud we are of our connection with them.

It seems to me to be specially necessary to remember this past connection and its excellent results, in order that our aims under the present conditions may be equally high and productive of equally good, if not better, results under what we claim to be the improved system. As a necessary consequence of the local character of the University, our students are denied the advantage of mixing with students of brilliant parts from all corners of the Presidency, as of old, and trying their powers and abilities with them. This disadvantage must be overcome by efforts to achieve and maintain an intrinsic excellence of our own, and we have no doubt that the learned professors and authorities of the University are leaving nothing undone towards this end. May it never be said that our separation from Madras has resulted in the least deterioration in the products of our University! May the University, on the other hand, gain and ever retain the respect of the educational world!

There is a danger that separation from the Madras University and the consequent exclusion of Mysore students from the Madras colleges may result in a certain amount of exclusiveness and isolation. To overcome this isolation, it seems necessary to devise some means of preserving a constant contact of our students with the outer educational world. In the conference of representatives from the various universities of the British Empire recently held in London, resolutions were passed that there should be an interchange of scholars between the different universities, so that the different universities may be brought more into touch with each other. It was said that if a South African or Australian Scholar kept part of the terms for an Oxford or Cambridge degree in a South African or Australian University and the remainder in Oxford or Cambridge, he should be entitled to receive a degree from either of the latter Universities, and *vice versa*. If some such means of establishing a reciprocity between the *alumni* of the Mysore and Madras or Bombay Universities could be established, the dangers of isolation would be effectively removed, to the obvious benefit of all the universities concerned.

Some special features and advantages have been claimed on behalf of our University. An intimate connection between the teaching staff of the college and the University, which gives the professors a voice in prescribing courses of study, in directing examinations, and in fact, in

every detail of the administration ; next, a strict control by the University over the social life of the students ; the development of residential life and athletics ; and finally, a close association between the professors and students in the University Unions—these were some of the special features claimed by the framers of the young University, and now, after the lapse of the first few years of its existence, it is pleasing to note that a satisfactory amount of progress has been made under each one of these heads, and these aims continue to be constantly kept in mind. A greater attention to the vernaculars, and to the diffusion of useful knowledge among the people by the establishment of extension and publication departments have also, it is seen, not been lost from view.

The modern tendency of all universities has been, it is said, development along the lines of scientific and technical work, and this has been welcomed for, no doubt, very cogent reasons. The present need for the development of the economic resources of the country is held fully to justify this tendency, and there is no doubt that in this age of science and industrial arts the shaping of university education on these lines is bound to grow, without any special advocacy on its side. So also with regard to the idea of the duty of the University to provide for the diffusion of useful knowledge among the people. Noble as these ideals are, it seems impossible for one, when contemplating the glories of ancient learning and literature, and the scope of ancient seats of learning, to minimise, for one moment, the importance of what is called the literary or humane side of education. It seems necessary, when every thought is turned towards scientific and technical education, to keep insisting on the claims of "liberal" and humanistic education, to avoid the possible danger of its losing the place which, beyond all doubt, is pre-eminently due to it in a scheme of university education. I may, perhaps, here indulge in a small personal reminiscence. A few days after I entered the service after graduation, I went one morning to "pay my respects," as it is called, to one of the highest officers of the State. In the course of conversation, he put me the question: "Are you a scientist or a mathematician?" I answered, meekly,—“Neither, sir: I am a student of history.” On this, quick was his exclamation,—“Oh, the most *useless* subject!” I was well aware, however, that he was not quite serious in his remark, because he was himself a great man steeped in philosophical and religious learning, and one who would give no more than its proper place to the knowledge of the sciences or of mathematics. The possibility, however, remains of predominance in education passing from letters to science, and this subject may, perhaps, now receive some brief consideration. In dealing with any subject connected with universities,

no justification is required for quoting, even at some length, the words of one who has given the highest thought to this theme, and enriched it with contributions of the most extensive and learned character. In his *Nature and Scope of University Education* Cardinal Newman says: "The business of a University is to make *intellectual culture* its direct scope, or to employ itself in the cultivation of the intellect, just as the work of a hospital lies in healing the sick or the wounded, of a riding or fencing school, or a gymnasium, in exercising the limbs. . . . The function of a University is *intellectual culture*; here it may leave its scholars, and it has done its work when it has done as much as this. It educates the intelligent to reason well in all matters, to reach out towards *Truth* and to grasp it. . . . A man of intellectual culture acquired by university education has the repose of a mind which lives in itself while it lives in the world, and which has resources for its happiness at home when it cannot go abroad. He has a gift which serves him in retirement, without which good fortune is but vulgar, and with which failure and disappointment have a charm."

While undoubtedly we must give its proper high place to scientific and technical knowledge, from the utilitarian and material point of view, the idea of knowledge for its own sake will always continue to maintain the highest place in the mind of man. The highest principle is that knowledge is its own reward. Considered in this light, it is called liberal knowledge, and is the scope of academic institutions. This has always been the view of higher learning with us, and our national genius and ancient culture must necessarily count in shaping our present aims and methods.

The development of character through the power of thinking, the cultivation of general culture and refinement, leading up to the making of the gentleman, the training of men in efficiency—these are all undoubtedly worthy and proper objects of a university training, but it seems to me that the outstanding objects should always be the fostering of learning and scholarship. The training of the gentleman and the promotion of efficiency may be secured through other agencies besides the university. But it is at the university alone that the foundations of learning and scholarship can be laid. There can be no doubt that the first importance should be attached to scholarship. Max Müller is said to have observed that the reason why English scholarship was inferior to German was the five o'clock tea. The social life dominated England. The social life did not dominate Germany. The German universities were scholastic, and the university professors prided themselves on their scholasticism. The Puritan mother who said to her son,—“If God made

thee a good man, and a scholar, I am content," might, he said, be found in many a Teuton home.

May it not be sincerely hoped that "liberal education" will not be prejudiced by the modern tendency to foster the study of practical and scientific subjects? Our genius undoubtedly lies in the direction of a liberal and spiritual education. Writing of ancient Brahmanic education, a Christian Missionary gentleman has said recently,—“Not only did the Brahman educators develop a system of education which survived the crumbling of empires and the changes of society, but they also, through all these thousands of years, kept aglow the torch of higher learning, and numbered amongst them great thinkers, who have left their mark not only upon the learning of India but upon the intellectual life of the world.” Let us not, then, ignore the bent of our national genius, and subordinate the study of literature, philosophy, history and religion to the study of scientific and technical subjects. . . .

Lastly, I cannot fail to refer to the singular good fortune which the Mysore University possesses in the royal favour which is unstintingly bestowed on it. The Royal House of Mysore has, from the earliest time, patronised art and learning in the most liberal manner, and the new creation of the Mysore University has been nourished fostered and blessed by royal love and favour. Under the wise protection and care of a loving Ruler as Chancellor, the University is administered by the most capable body of men in the country, guided in their deliberations by a distinguished Vice-Chancellor famed for depth of learning and scholarship, all of them thoroughly intent on doing, and giving of, their best for this new seat of learning.

Under such splendid auspices, may the University of Mysore prosper and flourish, and prove a blessing of the noblest and highest kind to the people of our beautiful State of Mysore.

## THE NOVEMBER SENATE MEETING.

THE Senate held its November meeting on Saturday the 23rd at 1 P.M., the Vice-Chancellor occupying the Chair. The meeting was occupied mainly with technical matters, certain motions of a highly non-technical character being postponed—for lack of time—to the next meeting. Several rather interesting topics, however, were discussed. Mr. S. R. Balakrishna Rao renewed the proposal that a Law College should be established, or at least classes in Law might be opened. The Senate obviously agreed as to this need, but rejected the motion because no arrangement financially possible at present would either serve the purpose or be creditable to the University. Dr. Mylavaganam, as of yore, laid stress upon the prior claim of Medicine, and probably all agreed with him. Yet it is to be hoped that at the earliest possible moment a Law College will be established—not only because it is essential to the completeness of the University, not only because of the expense, frequently prohibitive, of proceeding to Madras or Bombay for legal studies, but also because the less expensive of the options, study in Bombay, is so frequently disastrous to the health of the Mysorean.

Two motions were concerned with publicity. It was felt that in general the people of the State were insufficiently acquainted with the work, and the needs, of the University, which was unfortunate because this, like other universities, must depend upon public generosity for the desirable expansion of its activities. Newspaper references to Senate meetings are necessarily inadequate, and sometimes unnecessarily misleading. The value for the State of the work of a university is apt to escape recognition. Further, such interest as the public does take is apt to limit itself to criticism, and such criticism is often astonishingly ill-informed.—It was resolved that a Publicity Board should be created to give the people of the State information as to the University's work, with a view to impressing on them, in the words of Mr. M. Ramachandra Rao's motion, "(1) the difficulty of realising the full benefits of the University work with the present grant from Government, (2) the great necessity there is for public benefactions on a liberal scale to supplement the Government grant and (3) the nature of the improvements that could be effected in the University with the aid of such benefactions."

## A LIFE OF RABINDRANATH TAGORE.

It would scarcely be an exaggeration to call this small volume\* the most important book of the year, such is the need—the perplexity—to which it responds, and so well is it done. One is the more gratified to find that it is dedicated to our Vice-Chancellor. To that half of the book which is critical little reference need now be made, since the same author is providing a more detailed examination of the poet's work in *The Poetry of Rabindranath Tagore*, which is to be issued shortly by the Oxford University Press. Anyone seeking to justify the biographical reference in the interpretation of literature could find no more convincing argument than the case of Rabindranath. Error and exaggeration of both praise and blame, and among readers in India as well as in western countries, has obscured the special values of work the understanding of which depends, in a peculiar degree, on social and political, not to speak of personal information. Prompt and eager as was western recognition of Rabindranath's greatness, from the first it contained elements of misunderstanding. And just as the rectifier of wrong impressions must be someone familiar with the poet's work in its original language, so also he must be able, through biographical knowledge, through personal intimacy with the poet, and through genuine knowledge of all circumstances, to give the setting required by criticism. Mr. Thompson satisfies all these conditions. Responsiveness and judgment also are evidenced in the book. Whether they are adequate to what is one of the biggest tasks in present-day criticism must be discussed when the larger book appears.

Mr. Thompson traces the development of the poet's opinions, thoughts and powers amid the various influences to which he has responded, surrendering his soul to none of them. In those matters one can, alas! do little but accept Mr. Thompson, but fortunately he conveys an impression of dispassionate, reliable working out of things. There is one idea, however, which—apart from a natural dislike of it—we think may fairly be questioned. Mr. Thompson says that Rabindranath has a prejudice against "England and things English," and this

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\* *Rabindranath Tagore*. By E. J. Thompson, B.A., M.C. *The Heritage of India Series*, Association Press, 5 Russell Street, Calcutta. London, Oxford University Press.

prejudice, he thinks, "probably struck root" during the poet's first visit to England, 1877. "He has preserved," says Mr. Thompson, "some unpleasant stories and added some unpleasant comments, in his *Reminiscences*." We do not share the impression produced by *Reminiscences* upon Mr. Thompson. In the passage to which he refers Rabindranath gives a finely touched account of the selfish and thoughtless behaviour towards him of an individual; but there is surely no suggestion of resulting prejudice against a people. And Mr. Thompson develops the prejudice idea in a rather extraordinary way. He thinks that Rabindranath has come—largely as a result of "his false fame in the West"—to despise western intelligence, and in certain of his translations has contemptuously played down to it. "He took to inserting in his 'translations' pretty-pretty nonsense that was not in the originals at all. . . . As regards translation, his treatment of his Western public has sometimes amounted to an insult to their intelligence." Mr. Thompson gives his own translation of a certain poem, and sets beside it what Rabindranath "has thought fit to give to his poor pensioners of the West." "That is all," he says. "But it is too much. The picture might have had value of its own—there are elements of value in it, niggardly précis though it is—had he taken any trouble to polish it. As it is, it is a handful of careless words thrown at a public that he seems to have come to despise." Within this example, Mr. Thompson particularises several points, of which one may be cited. Here are some lines in Mr. Thompson's own really beautiful translation.—

A narrow, winding path its streak has worn  
From some far hamlet through the fields of corn,  
And dips to the water like a tongue athirst.

Rabindranath's prose rendering runs—

The long narrow path, like the thirsty tongue of the village, dips  
down into the stream.

Mr. Thompson comments—"He has kept the perfect simile of the path like a thirsty tongue dipping down to the stream; but has ruined it by that touch of cleverness, a red dab of paint from rhetoric's brush, a dab which did not disfigure the original, which makes the path the thirsty tongue of the village. This conceit is good in itself, but had no business to intrude here, where nothing else has any suspicion of cleverness." Beyond a doubt Mr. Thompson is right in objecting to "of the village;" it murders the figure. But it is not "clever," and it does not look in the least like contemptuous adaptation. One can imagine what may have happened. Rabindranath was seeking to abbreviate—to crystallise his thought. The original would not suffer this. It could

not itself be made shorter: a new and more concrete poem must be substituted. Every one of the changes to which Mr. Thompson objects is in the direction of concreteness. The result is not a rendering, but a new—and vastly inferior—poem. But it is not claptrap; still less is it deliberate claptrap. It is eminently possible that Rabindranath thought this sort of thing would be more intelligible to western readers than the other. It is certainly the case that in a considerable degree he misinterprets the spirit of English literature and of the English people; there are passages in *The Message of the Forest*, for example, that are undeniable evidence of this. One can go a long way with Mr. Thompson. What one cannot accept is the idea that Rabindranath deliberately set down something he felt to be unworthy. The greatest poet has lapses of judgment, but no great poet will write badly to secure or please a particular audience. Nor is the blatantly unintelligent contempt which Mr. Thompson attributes to Rabindranath possible to a man of the noblest stature. Were this attribution just Rabindranath would be a far narrower and weaker man than one would fain conceive him.

We have always longed to see Rabindranath's poetry rendered in adequate verse, and believe that the remoter accuracy of a genuine verse translation would give a more vital idea of the original than even the poet's own translations in prose. Mr. Thompson's translations, replete with mannerisms, show how difficult is the task, but they are an achievement. One looks forward to reading many more of them when his other book appears.—Might one hope that in its prose style the new book will differ somewhat from this one? The jerky, confiding manner has perhaps some relation to the special purpose of this book, but it would spoil a work of deliberate and systematic criticism, and is rather annoying even here.

J. C. ROLLO.



## REVIEWS.

*Glimpses of Bengal, selected from the Letters of Sir Rabindranath Tagore, 1885 to 1895.* MacMillan. 7s. 6d. net.

THIS book contains a translation of a number of letters selected from a collection already published in the original Bengali. A number of the poet's letters, he tells us, found their way back to him long after they were written. "Since these letters synchronise with a considerable part of my published writings, I thought their parallel course would broaden my readers' understanding of my poems as a track is widened by retreading the same ground. Such was my justification for publishing them in a book for my countrymen. Hoping that the descriptions of village scenes in Bengal contained in these letters would also be of interest to English readers, the translation of a selection of that selection has been entrusted to one who, among all those whom I know, was best fitted to carry it out." Hence the title of the book. The title is quite a misnomer. The book is about Rabindranath Tagore, not about Bengal. It does contain exquisite little pictures of life and scene, but to the English reader (one might better say, to the reader who does not know Bengal) they are very shadowy. Presumably most of these letters were written to friends already familiar with the country and its people, and such letters will inevitably omit many a detail that other readers would require. Besides this, a large proportion of the letters do not give even such "glimpses," but are simply revelations of the inward life of the poet. Such revelations are of profound interest even to the non-Bengali reader, and now that he has Mr. Thompson's account of Rabindranath's life to give the necessary background of events and production, he will find in these letters a valuable aid towards the understanding of much of the poet's work. The great interest of the letters, however, lies in the mere revelation of the poet's personality—so finely sensitive, yet so wide in sympathy. Many of them have a high literary value. They are very closely akin to his poetry, above all in the many passages that speak of Nature. They illustrate the truth of Mr. Thompson's bold but entirely justified words—"No poet that ever lived has had a more constant and intimate touch with natural beauty. . . . No poet that ever lived has shewn his power of identification of himself with Nature, of sinking into her life."

J. C. R.

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*The Sadhu: A Study in Mysticism and Practical Religion.* By B. N. Streeter, M.A., D.D. and A. J. Appasamy, M.A., B.D. MacMillan.

THE book treats of the life and message of an Indian Christian *sadhu*—Sundar Singh. He was born of Sikh parents at Rampur in the State of Patiala, but became a Christian while quite young and under almost miraculous circumstances. He is only 32 years of age now, and yet has already travelled widely in three continents and left an indelible impression on the minds of those that have seen or heard him. Some of the incidents of his life narrated in the book no doubt place rather too great a strain on the credulity of the ordinary reader; but there is no denying that it is a remarkable person whose character is sketched here. Sundar Singh is a mystic, not of remote history or of mythology, but of our own time, and we may therefore discover from his life the true import of the mystic way. The chief aim of the *sadhu* is to Indianise Christianity and to Christianise the Indian ideal of ascetism. It was with this object that, soon after his conversion, he decided to adopt the life of a *sanyasin* and put on the saffron robe, which he did not discard even during his sojourn in Western countries. This innovation indicates at once his courage, originality and patriotism. Such a man may indeed be expected to look at Christianity from a new angle of vision; and this he does for instance when he emphasises the ideal of Peace as much as he does the ideal of Love. When someone asked him at Oxford what he thought of English Christianity, he frankly pointed out that there was need for attaching greater importance to religion as "peace of soul." "Spiritual things," he says, "cannot be discerned without quiet and meditation." Young though he is, he is steeped in Eastern wisdom, and his conversation and preaching are enriched by Eastern fables and allegory. It is difficult to foresee what success will attend the efforts of Sundar Singh as the preacher of a new type of Christianity; but there is no mistaking that in him we have one more proof of the richness and variety of the new life that is manifesting itself in India to-day.

The book is very interesting; and the authors—one of whom, we learn from the Introduction, is engaged in research upon the relation of Christian mysticism to the *bhakti*-doctrine of India—have done their work with admirable devotion.

M. H.

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*Secondary Education in the Nineteenth Century.* By R. L. Archer. Cambridge University Press.

THIS work deals with three kinds of topic; intellectual and social movements which have affected education in the nineteenth century, the

work of individual endeavour, and the action of the state. To anyone who is pessimistic in regard to the progress of education this book should provide a useful antidote, showing, as it does, the striking improvements which have been effected in education both in school and university, in times which cannot be said to be ancient. Compare, for example, the Oxford of to-day, with its elaborate system of examinations, which most will agree provide a searching test of a candidate's ability, with the following account of a typical examination at Oxford in the middle of the eighteenth century. "For the test two candidates were paired off as opponent and respondent in a disputation. The arguments consisted of foolish syllogisms on foolish subjects, handed down from generation to generation on long slips of paper. Armed with these, the two disputants betook themselves to a large dusty room where not once in a hundred years does any officer enter; and if he does he hears one syllogism or two and then makes a bow and departs. For the rest of the time the candidates read a novel or carved their names on the desk. Passing was a matter of course"! Imagine too an Oxford Professor who is advised not to lecture as no audience will be forthcoming! "When Powell was appointed Savilian Professor of Geometry in 1827 Copleston advised him that it would be useless for him to lecture as he would not get an audience" Or take this description of a public school of the period just previous to the accession of Queen Victoria "The boarding arrangements were bad. Discipline judged by modern standards was intolerable. The moral atmosphere was never good and sometimes indescribably bad. School games were only taking shape during this period; no headmaster yet counted them as a means of training character." Nothing but the lifework of men who combined great force of will and moral earnestness with consummate tact could suffice for the task of reforming the schools. And fortunately such men were forthcoming, and this work gives a vivid account of the work and personality of some of these great headmasters. It is very interesting to note the different methods of these great educators, and the difference in their attitude towards some of the problems which they were attempting to solve, especially the problem of discipline. Some still held strongly to the theory that boy and master are "natural enemies." But we can perceive in the account of these great headmasters a growing repugnance to basing the whole of school life on this "natural enemy theory."

In addition to tracing the influence of great individuals on the development of education, the author also traces the influence of great movements, and, of course, these two influences are closely connected.

The first of these great movements in the nineteenth century was the rise of classical Humanism. To the old idea of "pure scholarship" was added the conception of opening up the life and thought of antiquity as an avenue to the better comprehension of modern problems. Mr. Archer gives a very interesting analysis of the causes which led to the changed attitude towards the study of the ancient classics. There were two main causes, the growth of modern democracy and the necessity of finding some defence against the attempt to undermine the Christian basis of morals. "Democratic Greece had created art, science, literature, and philosophy; democratic Rome had laid the foundations on which the Empire built the edifice of law. The democrat could always turn to classical history when he wished to show what his principles could accomplish. By studying the causes, first of the rise, then of the stability, and finally of the decline of the ancient communities it was possible to acquire a political sagacity which could be applied to maintaining modern states and civilisation." This change in outlook, which came to attach some value to the spirit as well as the letter of the classics, came none too early, as we may judge from the condition of the schools in the earlier part of the nineteenth century. The ancient classics were not read for the sake of any ideas or beauty of language or style but simply as a means for mental gymnastic. A Latin sentence was regarded as a kind of puzzle, and translation consisted in forcing the words by rule into grammatical but nonsensical English. It may sound incredible, but it is a fact that at some schools it was a rule that in construing every word in the sentence had to be parsed. Even in the University the same tendencies were only too much in evidence. Mark Pattison states that up to 1834 scholarship still maintained the premier place at Oxford in the school of *Litterae Humaniores*; and that a period ensued in which what was expected was a knowledge of the books prescribed for the examination page by page rather than a critical reflection on them. Perhaps no words can better express the changed attitude towards the classics than the words of Thomas Arnold.—"Aristotle and Plato, and Thucydides and Cicero and Tacitus are most untruly called ancient writers; they are virtually our own countrymen and contemporaries, and have the advantage which is enjoyed by intelligent travellers, that their observation has been exercised in a field outside the reach of common men; and having thus seen in a manner with our eyes what we cannot see for ourselves, their conclusions are such as bear upon our own circumstances, while their information has all the charm of novelty, and all the value of a mass of new and pertinent facts, illustrative of the great science of the nature of civilised man." The newer

classical Humanism of the nineteenth century was also inspired by the desire to find a corrective against the ever growing religious scepticism. "The situation was not unlike that at Athens, when, traditional beliefs having been shaken by the Sophists, Plato turned the tables on the destructive critics by showing the weakness of their own position. Once more Greek philosophy could be studied in the same spirit as that of Plato's original audience, as an antidote to the corrosive power of negation, which appeared to be dissolving the mortar that bound society together."

Mr. Archer quotes a lurid account of life at a fashionable girls' school in Brighton in the middle of the nineteenth century. The cost for a single pupil was £500 a year! Work lasted from morning till night. During the one hour's walk, when alone the girls were in the open air, French, German, or Italian verbs were recited. During the rest of the time they were reading or reciting in one of these languages amid the din of four pianos in various rooms, or practising accomplishments.

One is grateful to Mr. Archer for combating the oft repeated fallacy that in the German educational system science is the subject of supreme importance. Mr. Archer remarks—"There has been an attempt to represent the nearness with which the Germans came to victory as due to a supposed predominance of science in German education. In point of fact classics play a greater part in the school education of Germany than of England."

This is an illuminating book. It is evident that Mr. Archer is in love with his subject, and the glow of his enthusiasm is felt especially in those chapters in which he deals with the work of the great headmasters. And after all those great headmasters are representative, as much as any class of men, of all that is most manly and noble in English life and character.

A. B. M.

*In days to come.* By Walther Rathenau. Translated from the German by Eden and Cedar Paul. Allen and Unwin, 12s. 6d. net.

Dr. Rathenau's book traverses a remarkably wide range of subjects and no summary can do justice to it. The main thesis may perhaps be briefly indicated. The present ordering of society, based as it is on the utilisation of the forces of nature in the service of material ends, has led to the concentration of wealth in the hands of the few and the denial, not merely of means of culture, but even of bare living to the masses. It is not sufficiently recognized that there is an

order of importance among our wants ranging from necessary consumption to luxury, and in consequence there has been an indiscriminate production of all sorts of goods. "If from the outlook of this order of importance we contemplate the world's production of goods, we realise with a terrible sense of shock the fatuity of contemporary economic life. The superfluous, the null, the harmful, and the contemptible, are heaped up in our shops. We find there the useless gauds of fashion, destined to glitter for an hour with spurious light; intoxicants, stimulants, and anodynes galore, nauseating scents; worthless imitations of industrial and artistic models; articles made not for use but for show, trash of all kinds which serves as the small change for those who are compelled by convention to give one another presents. Season after season the showcases are refilled with these most futile of latest novelties. The manufacture, transport, and sale of such articles, require the labour of millions of hands; demand raw materials, coal, machines and factories, occupy nearly a third of the industry and commerce of the world. . . . Were but half of this squandered labour directed into suitable channels, it could provide food, clothing, and shelter for every impoverished wight among the dwellers in civilised lands." There is therefore an imperative need for the radical reconstruction of existing institutions. The lines on which reform should proceed are as follows.—

Monopolies and speculation, which are at present the chief sources of wealth should be discouraged. Consumption should be regulated by the imposition of prohibitive taxes on all forms of undesirable luxury. Inequality of property and income will, under any system be inevitable; none the less it is the duty of the state to mitigate glaring inequalities. One capital method of achieving this object would be to restrict the right of inheritance by the levy of progressive death-duties and income tax. "Such taxes will imply a recognition of the fact that beyond what is necessary for the ordinary amenities of civilized life, the one who acquires means becomes only the conditional owner of that which he acquires, while the state is fully entitled to relieve him of any or all of the surplus." Bequests for charitable or educational purposes, should be exempted from the claims of the state. All other inheritance over and above a moderate amount should accrue to the state and this surplus wealth should be devoted by the state to the relief of poverty. Lastly, the state should secure the benefits of popular education for all its subjects. It will thus be seen that Dr. Rathenau is prepared to invest the state with very wide powers. He does not share the distrust of the state which is now becoming fashionable. He thinks

nobly of it, and his panegyric of it is in the true spirit of Burke. "The love of home, tribal comradeship, a national fellowship of culture and experience, and a religio-theocratic kinship of sensibility, have founded the realm of the state in the supernatural. But the decisive point is the immanent necessity of the being, not its origin. The decisive point is the recognition that the hallowed institution stands higher than the need of the individual; the idea that man is not created for the sake of earthly happiness, but for the fulfilment of a divine mission; the belief that the human fellowship is not as it were a joint-stock association, but a home for the soul." No state, however, that is dominated by class consciousness can rise to the height of its mission. It is only the democratic state—the people's state as Dr. Rathenau calls it—that can prove an effective organ of the community for promoting the common good. The people's state is not, however, identical with popular government nor is it inconsistent with the monarchical ideal. "It is a postulate of the people's state that every group of its population shall secure a due share of influence, that every legitimate peculiarity of the people shall find expression in the state organisation; that every available spirit shall secure an appropriate method of service." Further, the people's state is not the mere outcome of the institutions of a country, of its written laws and constitution. "It is born of the spirit and the will." Politics therefore becomes merged in ethics. It is the duty of statesmen not merely to reform institutions but to awaken that moral consciousness among the members of a community which is essential for the successful working of institutions.

We have heard much recently about the mission of certain nations to impose, by force, if need be, their cultures upon other nations. Dr. Rathenau's remarks on this subject are so instructive that they deserve to be quoted in full. "Fallacious, likewise, is the abstract allegation that in the spiritual economy of the world this or that cultural form is absolutely indispensable, the allegation that this or that cultural form must for the general salvation be diffused abroad and universally inoculated with ever increasing energy. Civilisation has an extensive potency, because civilisation is based upon a common standard of life; but culture has no extensive potency, for culture is based upon the peculiarity and uniqueness of the spiritual. The strongest and most imperishable of the cultures known to history, the Hellenic culture, was in the days of its most splendid blossoming upborne by a smaller number of free men than live to-day in a single middle-sized provincial German Town. After its apparent death, this

culture gained the victory over those who had conquered it. Without propaganda, it diffused its reign over Europe, and has extended to China, America and Australasia. The ethical culture of Palestine spread throughout the whole world after the political extinction of the land of its birth, and to-day for the first time is encountering counter-vailing forces in unpetrified forms of faith. It would almost seem as if culture, like the red glow of sunset, could not spread across the skies and cover the earth until the star from which it radiates had set. This much, at least, is certain, that no form of culture is ever lost to the world. When the blossoming season of a nation (which rarely coincides with the climax of its political power) is over, unless it be content with a parody of its own past, it can be revived only by the infusion of fresh blood. Nevertheless, that which has been created becomes part of the consciousness of the planetary spirit, and it matters nothing if the records on parchment, metal and stone have been destroyed."

Dr. Rathenau's book is written with fervour and conviction and no one can rise from its perusal without feeling braced and fortified and without a clear consciousness of the spiritual nature of human society.

N. N. M.

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*A History of Labour.* By Gilbert Stone. Harrap (P. T. I. Agency, Bangalore). 15s. net.

THIS book is "an attempt to depict in the broadest manner possible the history of the masses, not only in England, but in other countries also, from the days when they were slaves to these days when they are free—and free not merely in the view of lawyers, but in truth." Though the book thus covers wide ground, it is at once concise and interesting and should be read along with Mr. Hobhouse's book on the Labour Movement, which contains by far the best exposition of the philosophy of that movement. Originally a slave, then a serf, the labourer succeeded in obtaining his emancipation, partly through the efforts of the Church on his behalf and partly through profiting by the opportunities afforded by the rise of the free towns. This emancipation, however, turned out in the end to be a dubious boon. The series of enclosure acts, which began in the seventeenth century and reached their culmination in the eighteenth resulted in his divorce from the land. At the same time the industrial revolution placed him at the mercy of the capitalist class. Excluded from seeking the help of parliament in which



he was not represented, the labourer built up for himself the Trade Union, to enable him to compete on equal terms with his employer. When suffrage was at length extended to him he succeeded in forming a Labour Party in parliament, which is at present agitating to secure him some control over the means of production. Mr. Stone's attitude to the demands of labour is slightly conservative. He is not altogether satisfied with the recent trend towards nationalisation of industries. He tries to show that the example of state controlled industries in Germany and other countries is not encouraging, and he does not hesitate to declare his conviction that any interference with the private working of industries whether by the state or by the workers will have the effect of seriously impairing the efficiency of production. The case for nationalisation is well put by Justice Sankey, the chairman of the recent Coal Commission. "Half a century of education has produced in the workers in the coal fields far more than a desire for the material advantages of higher wages and shorter hours. They have now in many cases, and to an ever increasing extent, a higher ambition of taking their due share and interest in the direction of the industry to the success of which they, too, are contributing." It is obvious that these words are capable of wider application.

N. N. M.

*A History of British India under the Company and the Crown.* By P. E. Roberts, Fellow of Worcester College, Oxford. Clarendon Press.

THE services of Mr. P. E. Roberts to the cause of learning are exemplified in his long expected "History of British India." The book is divided into two parts. The first part deals with the history and the struggle for supremacy of the East India Company, which, in the words of Marshman, "was created by the Crown 250 years before, for the purpose of extending British commerce to the East," and which "transferred to the Crown on relinquishing its functions an empire more magnificent than that of Rome." The second part finds India under the Crown "Leadenhall Street giving place to Whitehall." This period is opened by the memorable proclamation of Her Most Gracious Majesty Queen Victoria, and ushers in an era of settlement and pacification in the History of Indian Empire.

The author has brought the book up to the present time, the last few chapters being devoted to those momentous problems which are now engaging the attention of the scholars and statesmen of this country.

Who among the readers of this book is not interested in the origin of the constitutional agitation for Reform inaugurated by the birth of the National Congress, in the significance of the Minto-Morley Reforms or the Coronation Durbar, in the historical causes which led to the political unrest of India, in the prospect of responsible government suggested by the Montague-Chelmsford Reforms?

Mr. Roberts has taken not a little trouble to make the treatment of the subject exhaustive. The materials collected from authoritative sources and confidential quarters—memoirs of great men, despatches and reports of the East India Company, India Office records, parliamentary papers, not to speak of monographs and standard historical works—have been handled by him in a masterly manner and in a scientific spirit. After pointing out that the Sepoy Mutiny was mainly military in origin, Mr. Roberts remarks that “fortunately for British dominion in India there was no single national cause to which the agitators could appeal. The fabric of British power was built over the ashes of warring factions and race enmities.” The concluding words of the first part of his book are significant.—“This great work, the establishment of the British Empire was not accomplished . . . without some blunders and political crimes. To disguise them and to maintain that British administrators were always swayed by impeccable motives and unerring statesmanship is to produce an unreal and impossible picture, for we are dealing after all with human agency.”

Right through this work the author is scrupulous not to omit a single detail of importance. Every problem has been faced by him in its different aspects before a final verdict is passed on it. To Sir Richard Temple’s estimate of Lord Dalhousie, who characterises him as an imperial administrator, Mr. Roberts replies that “Dalhousie had the defects of his qualities. He possibly attempted to do more than any one man however able could do. There was not much field left to his subordinates except to carry out his rather imperious will. Though he freely supported men with whom he was in complete agreement, he was somewhat intolerant of original ideas.” Similarly, while depicting the military qualities of Clive, Mr. Roberts weighs carefully both sides of the question and decides that “Pitt’s famous description of Clive as a heaven-born general is hardly appropriate.”

The inferences drawn from the facts, the final finish in the summing up of the characters on policies of historic figures, are all Mr. Robert’s own. Writing on Clive Mr. Roberts remarks,—“In spite of some faults there is the stamp of grandeur in all Clive’s words and actions. . . . His headlong valour on the battlefield, his splendid daring

and audacity in a political crisis, his moral courage in facing disaffected and mutinous subordinates, his force and fire in debate all justify the lofty verdict of Macaulay that "our island has scarcely ever produced a man more truly great either in aims or in council." Again the author sums up the administration of Warren Hastings thus.—"Year after year the unedifying spectacle was presented of Hastings still patient imperturbable, courageous, standing at the bar of the Lords, a target for the terrible invectives launched against him by the three greatest orators of the day. Yet perhaps we may say that the impeachment had its uses, for while it ended in the acquittal of the accused it brought about the condemnation of the system under which he had been called upon to govern; and even if it revealed on his part some acts of impolitic and unjust severity and some instances of lax financial control, it also made known . . . his splendid administrative abilities, his cool and dauntless courage, his marvellous equanimity under cruel provocation and finally his untiring efforts, at last crowned with success, to wrest victory from defeat, and in a time of world-wide disaster elsewhere to leave the British inheritance in the East in extent and resources not less than he found it."

Mr. Roberts does not make broad generalisations at the sacrifice of historic precision, nor does his accuracy exclude elegance. His is the happy mean between abstruse writing with accurate knowledge of facts and broad generalisation on insufficient data. The book is written in masterly style. There is not that studied seeking for effect which is the fashion among some writers. Mr. Roberts' style is natural yet effective, flowing yet grand.

The reading of the book has been made all the more interesting and instructive by apt and happy quotations which are neither too many nor too tediously long. Another noticeable feature of this book is that the author has avoided the orthodox practices of writing an introduction and having a foreword written by some eminent man of the day. The book can speak for itself. It is well worthy of its author's name and fame. It deserves to be read and re-read by those who wish to form sound ideas on this subject. They will have the privilege of coming in contact with a writer who combines knowledge with style, fairness with accuracy.

H. K. R.

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*Our Hellenic Heritage.* By H. R. James, M.A., sometime Principal, Presidency College, Calcutta. Vol. I. (Part I. The Great Epics. Part II. The Struggle with Persia.) MacMillan. 6s. net.

No praise could be too high for this book: its aim is perfectly

achieved. That aim is "to bring together just so much of the elements of Greek legend and history as should be the possession of everyone born into the civilisation which we call European." Any cultured person, however, whether European or not, should have the knowledge and understanding which this book conveys, and it will be welcomed nowhere more warmly than in Indian universities. Mr. James was induced to set about his task by the sad spectacle of the decline of Greek studies. It can no longer be said, even in England, that a truly humanistic training necessarily involves a knowledge of the Greek language. It must always, however, involve a certain intimacy with the Greeks, to whom we owe so much of our intellectual inheritance. There is the most serious danger that with the language we may forget the people, the work, the power. This is the English student's danger. The Indian student has no Greek tradition to lose, but he also needs one. Without the language there never can be the fullest understanding: but Mr. James, steeped in Hellenism, gives what can be given.—His first chapter speaks of our many debts to the creative genius of the Greek people, while his second deals with "the land and the people"—the influences that made them what they were, and their general history down to modern times. Next he writes of gods and heroes, and his treatment of the mythology is interesting (apart from the essence of the stories) in three ways: he seeks to show how the mythological conceptions arose, he shows how they affected the people, and he makes frequent reference to their perpetuated life in English poetry. Next he tells "the tale of Troy," and produces a fascinating chapter on "Ilium and Mycenae," with regard to the discoveries made through modern excavation. Next comes "the story of Odysseus," admirably told, with references in each paragraph to the *Odyssey*, book and lines. In the second part of the book the story of the Persian wars is told, and the significance of the struggle is made clear. This narrative is preceded by chapters giving an account of the principal peoples of Greece, and of the city-state. It need hardly be said that no part of the book is of the stories-for-children kind. The style is simple enough, but the book is one for the student who simply has the bad luck not to know Greek, and it is as up-to-date in scholarship as it is delightful to read. There are excellent maps and plans, and a number of admirable photographs.

J. C. R.

## SCIENCE NOTES.

COMPILED BY MR. B. VENKATANARANAPPA, M.A.

*A Suggested Institute of Human Sciences.*—In the human sciences—those sciences which deal with the origin, the characters (physical, mental and moral), and the activities of man: in other words, the anthropological sciences in the broadest sense of the term—co-ordination and co-operation are more essential than in almost any other branch of scientific research. This necessity for co-operation, acting in conjunction with man's perennial interest in himself and his past, has led to the formation of a host of societies, each dealing with one or more branches of the subject. Some cover certain special aspects only—archæological, sociological, linguistic, psychological and the like; others study man on a regional basis, and of these some cover the whole field more or less completely, as in the case of Asia and Africa; while still others confine themselves almost entirely to the archæological aspect as in the case of the societies which deal with Egypt, Palestine and the Mediterranean area.

The function of these learned societies, in the main, is fourfold:—  
(1) They serve as a gathering place for workers at which the latest results of research can be announced and discussed. (2) They provide libraries which, in theory, contain books and periodicals not otherwise readily accessible to their members. (3) They act as the publishers of the work of their members which, on the ground either of its specialist character or of its brevity, is not suitable for publication—elsewhere or in book form. (4) They further the interests of their subject by the promotion and organisation of research and by pressing its claims to support upon the public.

There has been considerable variation in the measure of success with which these functions have been performed, but, speaking generally, as the affairs of the principal learned societies which deal with human studies are in the hands of those who have attained distinction in their subjects, they lead the way and exert a not inconsiderable influence upon the lines of development of further investigation.

Those who are concerned with the administration of these societies are well aware that the position is not entirely satisfactory. There is very little co-operation between societies although a few welcome, but

tentative, steps in this direction have been taken. Not only does this restrict undertakings which, for financial or other reasons, are beyond the resources of a single society, but it also leads to a certain amount of overlapping. Most societies have a library, and in certain sections the same books and periodicals appear in each. This is a waste of both space and money. There is also a waste of the time, energy, and money of the worker.

There is also the question of catalogues and bibliographies. Owing to the cost of printing, any catalogue which is to be of use to the members who live at a distance and cannot visit the library, is an impossibility, while a bibliography of current literature on comprehensive lines seems equally impossible without greater co-operation than has been secured up to the present.

The remedy might be found in the union of a number of societies dealing with this group of studies to form an Institute of Human Sciences, housed in one building and governed by a supreme council, each society retaining such a measure of autonomy under its own committee as is consistent with the common aim. That such an institute would greatly increase the resources at the disposal of the scientific worker is self-evident. Given an institution under one roof, organised to meet the needs of the worker, with a common library and a common staff and provided with an adequate bibliographical system, he should have no excuse if he failed to obtain all that he required.

In education it is now becoming generally recognised that, in addition to the study of physical and mental characters, the data of the human sciences have an important bearing upon many of the subjects of the curriculum of both universities and schools, and can be applied with advantage in teaching even quite small children. At present the educationist or the teacher who is not acquainted with the result of specialist research outside the four corners of his own subject is at a loss in which direction to turn for trustworthy guidance. Such guidance it would be one, and that not the least important, of the functions of the institute to provide.

NATURE

*The Parentage of Invention.*—"Necessity is the mother of invention" is one of the most commonly accepted of our ancient saws. But the inventors themselves do not all endorse it. Mr. Louis Brennan declared "that accident is the mother of invention in ninety-nine cases out of a hundred."

The exact percentage would be difficult to reach with any scientific precision. There are many instances that might be quoted to challenge Mr. Brennan's dictum. Lord Kelvin's famous solutions of certain problems of navigation—his improved compass, his flying soundings and his modification of coast lights—may, in a measure, be attributed to necessity, for they followed his purchase of a cruising yacht and his consequent realization of the need for some better devices than those already in use.

Mr. Brennan's generalisation, no doubt, was largely inspired by his own experience in the matter of his torpedo. Through his observation, in an Engineering Workshop, of the behaviour of a frayed driving belt that was working a planing machine, he stumbled upon the mechanical paradox that it was possible to make a machine travel forward by pulling it backward.

The history of the Brennan torpedo might be paralleled in the career of numerous inventors. First there was the observation of something that was either unusual or commonly overlooked, and then the illuminating flash that revealed how it might be turned to practical account. Often the accident itself is in the nature of a blunder or a misfortune. Careless workmen in a paper mill omit to add any size to the pulp and the result is a parcel of paper that is thrown aside as waste. Some one happening to use a scrap of this 'waste' to write a note discovers its absorbent character, and straightway blotting-paper is invented.

The burning of a starch factory on the banks of the Liffey reveals the adhesive qualities of scorched starch mixed with water, and introduces to the world a new and cheap gum. While researches are being carried out in a German laboratory, a thermometer breaks, and the mercury runs out into a heated mixture of naphthalene. The oxidation completed by the catalytic action of the sulphate of mercury resulting, shows a method of overcoming the one hindrance in the way of making the manufacture of synthetic indigo a commercial success.

The history of photography is full of examples of the fruitfulness of chance oversights. Daguerre is careless enough to lay down a silver spoon upon a plate that he has treated with iodine. He notices that the image of the spoon is retained and thus learns that a plate so treated is sensitive to light. Through putting aside one of his silver plates in a cupboard overnight he discovers the effect of mercury on a sensitive plate. Mr. Fox Talbot accidentally lets one of his exposed papers come in contact with a solution of nut-galls and thus ascertains the virtue of gallic acid. That uranium gives off invisible rays is discovered by Becquerel through putting some of it by in a drawer with

a photographic plate and finding an image formed upon the plate though it has not been exposed to sunlight.

The part that accident plays in the process of invention is the casual bringing together of circumstances in which the alert and observant mind discerns possibilities hitherto unrecognised. The point is that the opportunity of observation comes by accident and is not deliberately sought or arranged. It was not from any set purpose of forwarding his own scientific experiments that Montgolfier one day undertook the responsibility of airing his wife's gowns, when she was called to leave the house. He observed, while engaged on this task, that the gowns became inflated and tended to rise when filled with heated air, and madame Montgolfier on her return found her husband sending up little paper balloons and thus originating the invention which made him famous.

In such instances the obvious essential, if there is to be any result of value, is that the observer shall have that capacity of detecting analogies which professor Bain described as "the intellectual power of similarity." He discerns the underlying identity of processes that, on the face of them, seem to have no connection whatever. The invention of the pneumatic tyre, the stiff collar and the pneumatic brake was each of them the result of such an accident.

At least one valuable invention was the offspring of sheer laziness. In 1846 a railway pointsman, who had to attend to two station signals some distance apart, decided to save himself the trouble of walking to and fro between them by fastening the two levers together with a long piece of wire. A broken iron chair served as counter-weight. The wire ran on into his hut, where he sat nightly by his fireside and worked the two signals without setting foot outside. Presently the railway authorities found it out, reprimanded the lazy pointsman for his indolence, promoted and rewarded him for his ingenuity, and adopted his invention.

#### DISCOVERY.

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*Glands that cause our emotions*—There is an intimate relation between our emotions and those glands called "ductless" or endocrine, because their secretions are absorbed directly by the blood instead of being discharged through ducts. In a recent paper, Dr. Sante Naccarati explained this relation as far as it is possible to explain it in our present rudimentary knowledge of these glands and their functions.

The glands secrete what are called hormones. These have diverse characters, according to which gland produces them, and a perfect



balance between them is necessary to perfect health. In the course of his remarks, Dr. Naccarati said :

"We all know the great part emotion has always played in historical events and in the great achievements of human progress. A life without emotions would be a life without action. The history of art and literature shows how many masterpieces were inspired by the emotion of love. Probably a well co-ordinated and well balanced harmonic flow due to an emotion equals inspiration. Harmonic actions most probably take place in human intuition, which Bergson keenly compares to animal instinct. Thus the creations of geniuses in art, science and literature may have some relation with the hormones.

"Apparently it would seem that the cold man of science has no emotion which may be accounted as driving force for his discoveries. But this is not true. He has the interest, the expectation, the determination, the ambition which act as protracted emotional states in keeping on the harmonic flow necessary to the productive activity of the brain. As Woodworth observes : ' Anger, zeal, determination are closely allied and probably identical in part. Certainly they are aroused by the same stimulus, namely, by obstruction encountered in the pursuit of some end.' "

Dr. Naccarati believes that infant prodigies, who later in life show no signs of superior intelligence, are accounted for by some activity of the ductless glands which is highly stimulating to the mind and then ceases. Discussing certain well known emotions, he says :

"Emotions having their physiological seat in the endocrine—sympathetic system are involuntary, automatic, instinctive; they are unconscious when they start and become conscious only when the harmonic stimuli reach the brain centres. But as the will tends to take control of the instincts, so training and the superior feelings which appear later (altruistic, social, æsthetic, etc.,) tend to inhibit or to discipline the emotions by rendering them independent of the instincts, namely, by detaching them from the instincts. That is the reason why educated persons who possess such feelings and have developed orderly habits of reflective thinking are seldom dominated by the emotions, as are children, intellectual inferiors, uneducated, infantile and servile types of individuals, in which every emotion finds an outlet through instinctive egoistic reactions."

#### POPULAR SCIENCE SIFTINGS.

*The Ubiquitous Radio.*—Progress has been remarkably rapid in radio telegraphy and little less than astounding in radio telephony.

By far the greatest fascination in amateur radio has been brought about by the almost unbelievable development of the radio telephony ; for, had it not been for this, amateur radio would ~~still~~ be confined to those either understanding the telegraph code or willing to master it through persistent practice. Whereas, up till the recent past the ordinary layman simply heard a jumble of meaningless dots and dashes when listening to radio activities, to-day the same layman can hear wireless music and regular conversations which need no translation of any kind. The radio telephony has made radio interesting to every one.

The number of radio telephone stations in regular operation is truly surprising. The reason for this rapid growth is simple enough. Until the practical development of the vacuum tube, which in its main essentials is simply a form of incandescent lamp with a number of additional elements introduced into the glass bulb, there has been no simple method of generating radio waves for the transmission of speech. The cumbersome and sputtering arc, the highly expensive and intricate high frequency alternator, and other old time methods have been quite out of the reach of the amateur. To-day, however, a small radio telephone set with a range of anything up to, say, twenty-five miles is quite within the reach of the average pocket book.

In any of our large cities we now come across several radio telephone stations that are owned and operated by amateurs who enjoy themselves by sending out radio concerts and talks that may be picked up by any one within range and possessing a receiving set. Radio telephones are now being employed in certain sections for spreading the gospel so to speak. A clergyman delivering his regular sermon can broadcast his voice over a wide radius and reach thousands of listeners by means of the present radio telephone.

Music can be broadcasted with little difficulty. In fact, manufacturers of radio apparatus may be expected in the no distant future to maintain regular broadcasting radio telephone stations for the purpose of furnishing music to the users of their receiving sets. At least one company plans to produce a receiving set made in the form of a cabinet phonograph which standing in the home of the user, may be tuned for receiving sermon, speech, music, market reports, government bulletins and what not, when radio telephone becomes still more popular.

The United States government has undertaken the broadcasting of information regarding the conditions of the live stock and similar markets in various sections of the country for the benefit of farmers and live stock raisers. This service is proving such a success that it will be expanded.

For the benefit of the mariners, the Bureau of the Light-houses of the department of commerce has established radio beacon stations which are designed to function with as definite reliability and over as great distances as the lights and other signalling devices.

And all the foregoing, be it borne in mind, is available for the layman. There is no special code to master, while the receiving apparatus now available is so simple that any one can use it. Truly, radio is now available for everybody.

Is it any wonder then that we find the camper making use of a radio receiving set to keep in touch with the world's happenings or perhaps to secure a little music for the evening's entertainment? Instead of erecting a large aerial, the camper simply makes use of a large kite or a small balloon which is sent up with a long copper wire that serves as the receiving aerial. For shorter distances the amateur can obtain satisfactory results with a small out-door aerial or even a dozen turns of wire wound on a square framework making what is known as a loop aerial which is used indoors.

SCIENTIFIC AMERICAN.

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*Heredity of Twin Births.*—Prof. C. B. Davenport of the Eugenics Record Office, Coldspring Harbour, has been collecting statistics with regard to the heredity of twin births. It appears that about one per cent of human births are twin births; but there are certain families in which the proportion rises to 5, 10 and even 15 per cent. There can be little doubt that in both man and such animals as the sheep there are strains showing a special tendency towards the production of twins. The study of twins is complicated by the fact that there are two types, viz., twins derived from a double ovulation and twins derived from a single ovulation, in the latter case there being a subsequent fission or budding of the fertilized egg. Such single egg twins are easily distinguished clinically by being both enveloped in the same chorion and they are always of the same sex. Prof. Davenport has come to the conclusion that the influence of the male in twin production is determined by the circumstance that twin production does not depend merely upon double ovulation, but upon such a quality of the male element as shall result in a high proportion of fertilization of eggs ovulated and a small proportion of fertilized eggs containing lethal factors.

SCIENCE PROGRESS.

*The article on Relativity and that on Indian Art will be continued in the next issue. These, together with Educational Notes, have been crowded out of this issue by review-matter,*

# SUPPLEMENT TO THE MYSORE UNIVERSITY MAGAZINE

THE SECOND CONGRESS OF THE UNIVERSITIES  
OF THE EMPIRE. OXFORD, 1921.

BY F. R. SELL, M.A., Delegate of the University of Mysore.

## 1. THE MEETINGS OF THE CONGRESS.

THE second Congress of the Universities of the Empire was held at Oxford in the magnificent Examination Schools for four days, July 5—8, in morning and afternoon sessions. Each session was presided over by a chancellor of a British University. Lord Curzon, the Chancellor of the University of Oxford, opened the Congress with a stirring speech from which I quote the following sentences:—"I am one of those who are unhappily engaged in the endeavour to find political solutions for largely insoluble problems. The conviction grows upon me that it is not so much on paper conventions or signed documents, or even on political combinations, that the peace of the world will depend as it is upon the growing commerce of knowledge and ideas, the freemasonry of intellectual ideals, the drawing together of the minds and consciences of educated and thoughtful men. I feel therefore that this Association has it in its power to play a very important part in developing the organization and drawing closer the bonds of the British Empire. But I feel also that it may aspire to a wider and more cosmopolitan range of influence, and that, as it draws within its orbit the educated intelligence of other countries and notably that of America, it may exercise an appreciable influence on the peace of the world." Each of the eminent chairmen at the successive sessions had something weighty to say germane to the subjects for consideration. A few quotations must suffice. Mr. Balfour, in introducing the subject *The universities and the teaching of Civics, Politics and Social Economics*, said: "In the happy days of the eighteenth century when everything seemed so clear-cut, so simple, so precise in outline, politics shared this

happy simplicity with other subjects. All mankind were supposed to be born alike. Unfortunately for our ease of mind, we do not live in those happy and simple-minded days. Now we have, among other things, to take account of the innate difference in the raw material with which we have got to deal, and such questions as this arise. If a particular nation or race has evolved a special form of ability, can it be successfully imitated, and how far can it be successfully imitated, by men of different race and origin? What science teaches and observation proves is that, though there is no question of superiority or inferiority, there are great differences; and the question is how social science and political science are to deal with these differences, and what modifications these differences ought to make in any theory of politics that we may make for ourselves or try to instil into others." Lord Haldane, introducing the subject *The universities and adult education*, remarked: "All over the world those who work with their hands are calling for the higher knowledge. They are held back by the fetters of ignorance from freedom to solve their own social problems. We cannot bring democracy into the universities. It would swamp them. What we can do is to enable the universities with more trained teachers to go forth into the highways and by-ways and central places, and there teach what they have to teach and work and live with those with whom they will be in contact in every kind of industrial life." Lord Robert Cecil, in opening the discussion on *Universities and research*, with characteristic idealism pleaded for research as a means of promoting the brotherhood of humanity, for "learning has no territorial boundaries."

The whole programme of this Congress was so big and dealt with such vista-opening topics that I cannot hope to deal adequately with the thirty-five papers read. I felt keenly sorry that Mr. Denham was prevented by illness from attending. It was, I know, a grievous disappointment to him, an old Oxonian, to be obliged to stay away on such a momentous occasion, and a great handicap to myself to be the only delegate from Mysore, trying, without his great experience and insight, to educe from this mass of business a report of value. Fortunately the proceedings of this Congress are to be published in book form, so that all to whom these questions are of real concern may study them at leisure. I conceive, therefore, that my part must be to sketch a summary of the proceedings, throwing emphasis on topics that seem more immediately to concern our universities in India. For example, the whole question of *The universities and secondary education* was dealt with almost entirely from the Scottish and English points of view and practice, so

that it seems better to omit this section and to await the publication of the proceedings. Again much of the matter discussed under the heading *The universities and adult education*, interesting though it is, cannot as yet appeal except academically to us in Mysore. In the larger and older universities of India the subject should perhaps be considered, but for the newly instituted universities the internal questions are the really urgent ones. I do not think that for the young and new universities the time is yet ripe for more than the type of extension work that we attempt in Mysore. Yet again, much of what was said about technological education in its relation to university work can be only of passing interest to a Mysorean. I admit I say this with some hesitation. Our chemists and physicists are so up-to-date that perhaps they will feel little hesitation in trying to set up a small "faculty" or "school" in glass making and paper industry technology. Considering the extraordinary evolution in Oxford University in the last seventy years, as depicted by Mr. Frederic Harrison, I shall not venture to prophesy that within a quarter of that time Mysore will not specialize in some branch of technological studies as suggested above, probably in friendly and fruitful co-operation with the Indian Institute of Science.

When the Congress had been in session one day the members felt that the programme was too heavily laden—there were too many papers to be read and too little time left for free discussion. It was then decided to ask the writers of these papers to speak to the subjects of their papers within a short time limit. This was a handicap to some speakers of the second day, but those of the third and fourth days had time to adjust themselves. Even then, however, some questions were squeezed out, or treated so cursorily as to be of no value. I refer especially to the topics on the agenda for the fourth afternoon that I particularly wanted to hear discussed, *viz. How to raise funds to make a trust for the promotion of the migration of students; Equivalence of entrance examinations; Mutual recognition of study and examinations.* These three questions deserved at the least a full day's discussion. Practically all that I remember concerning these questions was a fantastic suggestion thrown out by the delegate from Malta of some imperial matriculation examination.

A brief outline of the programme is here necessary :—

TUESDAY, JULY 5.

*Morning Session.*

*Chairman.*—The Most Hon the Marquess Curzon of Kedleston,  
Chancellor of Oxford University.

THE UNIVERSITIES CONGRESS, 1921

*Subject.*—The universities and the balance of studies.

- (a) The place of the humanities in the education of men of science and men of affairs.
- (b) The place of the physical and natural sciences in general education.
- (c) The question of specialism in university curricula.

Five papers were read on these questions.

*Afternoon Session.*

*Chairman.*—The Right Hon. A. J. Balfour, Chancellor of Cambridge and of Edinburgh Universities.

*Subjects* —(1) The universities and the teaching of Civics, Politics and Social Economics.

Three papers.

(2) The universities and secondary education.

(a) The frontiers of the secondary school and the university.

(b) The influence of university entrance requirements upon the curricula of secondary schools.

Three papers.

WEDNESDAY, JULY 6.

*Morning Session.*

*Chairman.*—The Right Hon. the Viscount Haldane of Cloan, Chancellor of Bristol University.

*Subject.*—The universities and adult education.

(a) Lectures for the general public within the walls of the university.

(b) Extra-mural work.

Six papers.

*Afternoon Session.*

*Chairman.*—The Most Hon. the Marquess of Crewe, Chancellor of the University of Sheffield.

*Subject.*—The universities and technological education.

Four papers.

THURSDAY, JULY 7.

*Morning Session.*

*Chairman.*—Dr. J. C. Irvine, Vice-Chancellor of the University of St. Andrews.

(Dr. Irvine was called to the chair upon the melancholy announcement of the sudden and unexpected death of the Right Hon. the Lord Balfour of Burleigh, Chancellor of the University of St. Andrews, who was to have presided at this meeting.)

*Subjects.*—(1) The universities and training for commerce, industry and administration.

Two papers.

(2) The university and the training of school teachers.

Two papers.

*Afternoon Session.*

*Chairman.*—The Right Hon. Sir Robert Stout, Chancellor of the University of New Zealand.

*Subject.*—University Finance.

Two papers.

FRIDAY, JULY 8.

*Morning Session.*

*Chairman.*—The Right Hon. Lord Robert Cecil, Chancellor of the University of Birmingham.

*Subject.*—The universities and research.

Four papers.

*Afternoon Session.*

*Chairman.*—The Right Hon. Lord Kenyon, Pro-Chancellor of the University of Wales.

*Subject.*—Interchange of teachers and students.

(a) The institution of a sabbatical year for professors.

(b) Provision of temporary junior posts for graduates of colonial and foreign universities.

(c) (d) (e) Subjects I have already mentioned.

Four papers.

There were, in addition, two delegates' meetings and, apart from business altogether, a *conversazione*, two garden parties and an address on *Some recent advances in education* by the Right Hon. H. A. L. Fisher, President of the Board of Education.

Thirty years ago a university degree in Brewing (recently set up by the University of Birmingham) would have been well nigh unthinkable. To-day it gives the comic papers a chance to have a "dig" at "Pussyfoot" ideas, but otherwise commends itself to most Englishmen.



Leeds, to take another example, can find excellent training for a degree course in Leather! It was not without significance therefore that the first place on the programme was given to *The place of the humanities in the education of men of science and men of affairs*. Technological studies, training for commerce, industry and administration, the teaching of Civics, Politics and Social Economics (as apart from Political Science and Political Economy in the older sense), all these are newcomers into the sphere of university education, rightly insistent on admission to the charmed circle by reason of the far-reaching changes wrought in and by scientific knowledge pure and applied, making the year 1921 much more than a hundred years older than the year 1821. University education must reflect the philosophy of the age no less than that of the ages. Even ancient studies need a re-orientation. Dr. Farnell, Vice-Chancellor of Oxford University, the reader of the first paper, demanded a greatly changed handling of Hellenistic studies to enable them adequately to serve the needs of the twentieth century. He said that the leading educational centres of the Anglo-Saxon world, not to speak of other areas, were turning their backs on the older traditions of European culture and refusing to be interested in its origin. He suggested that a fuller knowledge of Hellenic history and political philosophy would help us in our social problems. "The training of our scholars both in public schools and colleges has been for some centuries too linguistic, too grammatical, too rhetorical and stricken with formalism and pedantry. It has given us false idols and the narrow spirit of a mutually admiring coterie that writes Latin and Greek verses to each other and no one else. It is not possible save by long and arduous training to bring the working class man into direct and magnetic contact with Homer, but the great monuments of Greek art can convey much of their message to an intelligent man of average imagination and perception after a few weeks of skilful guidance." This view was borne out by Sir Frederic Kenyon, Director and Principal Librarian, British Museum, in his paper *The universities and humanistic research*. I quote his words: "But I would wish to remind you that research likewise has its value in the sphere of literature. Literature is the embodiment of the thought of the past, and its interpretation depends on an exact appreciation of the words in which it is expressed and of the circumstances in which it was written. Even after generations of literary criticism we have still something to learn of authors so well known as Virgil and Horace, and very much more of the writers of an earlier age. Our comprehension of Homer has been profoundly modified as the result of two generations of

research. Archaeology and anthropology have combined to vivify our appreciation of the Athenian dramatists and Herodotus. The spade of the explorer has added to the extant remains of Greek literature and much literary and historical research has been needed to elucidate these discoveries."

The whole attitude of the British universities towards research or rather towards organised training for research is changing. This part of the programme no less than the question of the proper attitude of the universities towards adult education shows how our British universities are breaking fresh ground, though it is true the latter question in some form is only comparatively recent. New again to our British university ideas are the questions of the migration and the interchange of students and teachers, partly no doubt consequent upon the new movement—the quinquennial congress of the universities of the Empire. This desire to keep in closer touch with one another also finds expression in the practice of a "sabbatical" year for professors which the Australian universities rightly consider so important to the vitality of their highest teaching. Moreover a new phase has appeared in the relation of the State to the university in Great Britain in the payment of direct treasury "en bloc" grants without conditions, that is without infringing the much prized autonomy and individuality of the universities who in their hour of dire need have had to look to the State for financial aid. No one with the example of such nationalised universities as Germany has wishes to see the type even approximated to in Britain. It is fair to add that the Canadian delegates agreed that in America the State thus far had shown no wish to make the universities into mere propaganda machines for Government policy. How long, in these days of political experiments and expedencies, will this happy condition last? Of course the universities have a moral obligation to the State, as have all other corporate bodies within the State, to abhor anarchy and sedition. Liberty here as elsewhere does not connote licence.

The sense of interdependence has been stimulated by the feeling that "*non omnia possumus omnes*"—that with the growing expensiveness of higher education our universities must specialize and concentrate, especially in the costly branches of technology, each on some one or two branches most appropriate to its geographical position or its particular library facilities or the quality of its "personnel." For example, the post-graduate research student in history cannot expect to find all periods at his command in any one university. In Oxford he will find medieval history and colonial history. He must go elsewhere for other periods. The migration of students is a complicated

and difficult question. Where all the universities are of uniform pattern as in Germany a student can wander from one to another after each "semester" or session but in British universities I do not see how he can do so whilst still in the *undergraduate* stage. There are some obvious disadvantages in breaking in upon the close corporate life that all our universities aim at. However, this question was not discussed, but only glanced at. It hinges on the knotty problem of mutual recognition of study and examinations, a problem that admits of no easy solution.

The way in which our universities are seeking to do their duty by the democracy without their walls is a wonderful story that would take long in the telling. I was privileged to hear a speech from Mr. Albert Mansbridge of the Workers' Educational Association, who for many years has been the prophet and the guiding spirit of this work. The point that seemed to me the essential point emerging from the papers read on the topic of adult education was briefly this—that for a successful prosecution of extension work and extra-mural tutorial classes there must be strong local demand, local organization and support. Without these the most elaborate extra-mural organization for this work falls to the ground. In Britain however this local demand and support are increasing, and the universities are nobly responding, realising no less surely than the more responsible leaders of the working classes, that democracy, if it is to rule, must be educated—that class divisions must not be horizontal between the various strata of the "haves" and the "have-nots" of worldly goods and position, but that rather they should be, in this imperfect world of ours, indicated by a single vertical line between those who "know" and those who "know-not." The universities are seeking to turn what used to be called the "educational ladder" into the "educational highway," and into as broad a highway as possible so as to win the support of all thinking men. The full story of this wonderful effort has a literature of its own and must be read therein.

The unifying concept—the one in the many—in the discussion of the subjects *The universities and the teaching of Civics, Politics, and Social Economics*, *The universities and technological education*, *The universities and training for commerce, industry and administration*, *The universities and adult education* seems to me to be the concept of the university ideal of teaching and knowledge in all these varied subjects, and in all that is taught in extension courses or in tutorial classes for working men, and the university ideal of life. The antithesis between the university way and the professional or trade way

was sharply drawn. Even Sir William Ashley, Professor of Commerce, University of Birmingham, who proclaimed himself unashamed of pushing the claims of "utility" subjects, of "bread-and-butter" studies, to full recognition as worthy of university rank, maintained that they must be taught in the university way or tradition. What then is the university way? Briefly it is the "humanistic" way. Sir William Ashley said: "The education which alone deserves the name of a university education is one which aims at training the judgment, not the memory or technical aptitudes; to be worthy of its place in a university curriculum a subject must be capable of reduction to principles or grouping in generalisations—principles and generalisations illuminated by analysis and bound together by ties of causation. The task now before the universities is just this: to realise that subjects of instruction in themselves directly and obviously appropriate to a future business career are capable of being handled in two very different ways: in a way which burdens the memory with unconnected facts and rules, and in a way which exercises the reasoning faculty and becomes the vehicle of a real education. Instead of aiming only at mental culture and trusting that somehow utility will emerge as a by-product, we are completely justified, I have held, in aiming directly at utility and seeking in and through such studies for the mental discipline and mental enlargement that we all desire. But all this is only on the assumption that the utility is rightly conceived or—what comes to the same thing—that the subjects are taught in the right way . . . The chief danger just now is not from the over-abstract but from the over-practical. There is a good deal of "commercial" teaching in municipal commercial schools and evening institutes which is intended for clerks. I say nothing of its appropriateness for them, though I have my doubts. But it is very evident, if we may judge from the text-books used, that much of the instruction is directed only to the memory, and that it contains a mass of detail about current office practice—detail most of which an observant graduate would pick up in a few days in an office, and some of which will probably never come his way at all. The temptation to the university is so great, to put down an attractive title for a course—e.g. "Commercial Practice" or "Business Organization"—and appoint a teacher who has had some "business experience," that I feel bound to utter a warning cry. The best way of meeting this danger is to select that semi-technical subject which can be taught with an appeal to the reasoning faculty throughout, and which can be brought into touch with the "economic" courses proper . . . Of course I mean *Accounting* :

not *Accountancy*, unless the university intends to prepare accountants for their professional examinations, but *Accounting*—that understanding of the *rationale* of accounts which all business men ought to possess. Accounting—especially its early stage commonly known as “Book-keeping”—can be taught in a mechanical and unintelligent way. That is the fault, I am told, of much of the book-keeping taught in schools. On the other hand, properly taught it is provocative of thought throughout . . . Now let us pass to modern languages. The teaching recommended has often been conceived of so narrowly as to defeat its own object. It is not mere ability to write business letters in other languages or to prepare polyglot catalogues that is chiefly wanted, though that has its use; but general business intelligence and an appreciation of foreign conditions and opportunities. The commercial study of a language at the university should be of a wide scope, and it should be preceded by linguistic and literary study. The commercial study itself should include not only commercial correspondence, which is no very troublesome matter to a student who comes to it well prepared, but also the reading of typical examples of economic and commercial and financial prose . . . and before he comes to that I would have the student read a little of the best literature of the country. A man who has read some Molière or some Cervantes or some Dante appreciatively has gone some way to understanding Frenchmen or Spaniards or Italians—not a negligible acquirement even from a commercial point of view. And if he never has to do business with the nation, he has had one opportunity, at any rate, in his life to develop his imagination and enlarge his sympathies. . . . And so, even for its own purpose, commercial education in our universities must never be technical in the sense of the technician; it must be humane also, and aim at the understanding of men.”

One of the best papers read at this Congress was that of Miss Linda Grier, Lecturer in Economics, Newnham College, Cambridge, on *The universities and the teaching of Civics, Politics and Social Economics*. Her plea for the adequate recognition of these subjects was in effect that it is the duty of universities to bring the university ideal of knowledge and of teaching to bear upon a group of subjects that need it more than any seeing that they touch us all so very closely. Miss Grier put forward an extremely able justification of the establishment in Oxford of what is popularly known as “Modern Greats,”—that is, an Honour School of Philosophy, Politics and Economics, which Oxford has set up because “it is expedient to promote the study of the structure and the philosophical, political and economic

principles of modern society." A few quotations from her paper must suffice. "The universities have hesitated so to extend their scope as to admit subjects battered by common controversy. The same position [as that held by Political Science and the History of Political Theory] has not readily been won for Politics, Civics and Social Economics as directly treating of modern problems. . . . If the ignorant and the propagandist mishandle and twist to their own uses subjects which, for their adequate study, require scientific training and scholarly treatment it is high time that the universities should set them in their proper place." After a masterly exposition of the leading characteristics of our "new age"—"the great size of modern communities, their intimate contact, with the concomitants of specialisation, amalgamation and interdependence," Miss Grier concluded by saying: "Disinterested scholarly treatment is demanded by the magnitude and difficulty of the problems. No group of subjects stands in greater need of persistent research, of vigorous co-ordinating work, of scientific study. The universities alone can do what is required. . . . Civics, Politics and Social Economics cannot well be taught by those who have ends of their own to serve and who, by means of careful selection and elimination of facts, give these subjects a false air of precision. Nor can they be dealt with by those who lack scientific training and so are unable to see the wood for the trees. Whether definite social training should become a permanent part of the work of the universities is a moot point. But those concerned with such training are wise at present in inducing the universities to undertake it. For, until the universities have sifted and collated facts and made a great mass of knowledge accessible to non-university students, and until they have informed and sent out a body of teachers capable of presenting knowledge in a scientific manner, there can be little adequate teaching of social economics outside their walls. Since Civics, Politics and Social Economics are sciences, it is with cause and effect that those who study them have to deal. They search the past for purposes not of illustration but of explanation, that by the light so thrown on the present more may be thrown on the future. The necessary information exists but it is widely scattered in the official, industrial and journalistic literature of many countries. An army of research students is needed to collect and sift it, and the direction of their work requires a body of teachers with a supreme capacity for distinguishing values. The work must be co-operative; it is too great to be done in isolation."

The technologists also approached their problem how to define and delimit technological studies so as to prove their worth as

university studies in the same spirit. In the words of Sir Robert Falconer, President of the University of Toronto, "In these days not merely of importunate candidates for the right of entry but also of specialised professionalism, it must not be forgotten that a university is not a set of public utility schools bundled together by the tie of a common administration nor yet a machine compacted of many parts. It is an organism with an intellectual, nay a moral spirit, which gives it unity and life." Sir Arthur Currie, Principal of McGill University, Montreal, in discussing the relation which the universities should hold to technology in the more restricted sense of the word, that is to say, to the actual work of the individual trades says: "At present, however, it would seem that the universities should not undertake to train men for the work of their respective trades. . . . To surround itself with a great group of elementary technical schools would make the organisation and administration of the university elaborate and cumbersome without any corresponding gain. Possibly in special cases where the university is situated in a district which is the centre of some single industry or group of closely allied industries, it may with advantage relate itself to a group of special trade schools. It is in the higher planes of technological education that the university has its fitting place." Both Professor Smithells, Professor of Chemistry, Leeds, and Mr. Maxwell Garnett, sometime Principal of the College of Technology, Manchester, strongly urged that technological studies, under proper conditions, should be pursued in universities rather than in separate specialist institutions as in Germany. Mr. Garnett said: "It is better for the universities because the presence of men and women who are looking forward to industrial careers widens the interest of the other undergraduates and so improves that immensely important side of university education which depends upon the influence, not of teachers upon their pupils, but of fellow students upon one another. The inclusion of technological studies also benefits the universities by keeping them in close touch with leaders of industry and commerce, men who are indebted to their university for the foundation of their subsequent leadership, who have not forgotten their debt and who look to the university to supply their assistants and successors. The provision of the highest technological education by universities instead of by separate institutions tends also to benefit the industries, by harmonising the ideals and purposes of leaders of the people in many different walks of life, by widening the interests of the future captains of industry, and by accustoming them to an atmosphere of scientific inquiry, so that in due course they will encourage research,

well understanding that research is something more than experimental tests—more even than attempts to discover immediate industrial applications of established facts.” A high standard, Mr. Garnett maintains, must be insisted upon in the student and in the subject. Undergraduate studies in technology must be of “Honours” standard, and the course must aim at making the student “a Bachelor of Arts, skilled in the art of learning, and only incidentally have given him a body of scientific knowledge capable of immediate application. . . . In urging that the chief aim of an undergraduate course must be to cultivate skill in thinking rather than to impart information I do not at all mean that such a course must be detached from practical things. Technical knowledge is, in fact, a most excellent foundation and medium for cultivating skill in thinking.” Professor Smithells pointed out the dangers of following the German way of setting up separate specialist institutes—“Technische Hochschulen”—as “directed to the object of immediate utility.” The Germans must acknowledge “that there is something in university life transcending in importance the achievement of efficiency, and that the first care of the nation should be that its education proceeds where influences prevail that will touch the spirit of youth to right ambitions and ideals of life.” In this connection, speaking of the working man, Professor Smithells said: “So far as education is concerned it seems clear that, if we are to accept their spokesmen, the rank and file of the teeming world of labour will not have it that their new and increased education shall be permeated and dominated by a sordid and material aim.” Another speaker made it clear that rather do they yearn for as much of the “academic” spirit and atmosphere as they can get, and that they are never so happy as when they find themselves lodged in some Oxford or Cambridge college during a “summer school.” Dr. Desch, Professor of Metallurgy, University of Sheffield, made a valuable contribution to the consideration of this “unifying concept” by his paper *The place of the humanities in the education of men of science*. He said: “The study of a science or of a branch of technology demands so much time, and proves so absorbing to the earnest student, that his outlook is apt to become cramped, unless a proper balance be maintained between technical and humanistic studies.” He argued that it overloads the curriculum and is unduly burdensome to the student if we try to balance the specialised courses of instruction in science by a certain number of specialised courses in the humanities. He would prefer to reconcile the scientific and humanistic sides of education “by making the teaching of history scientific and that of science



historical. . . . The most important safeguard against a limited vision is to be found in the historical spirit. An understanding of history most readily brings knowledge into the right perspective." Therefore he advocates the classics of science being made available to students, and the reading of good biographies of the great discoverers. "In the study of a pure science, the historical treatment gains greatly in value if the student be shown how each discovery was related to the state of intellectual development at the time when it arose. . . . Students should strive for "such an acquaintance with *general history* as will enable them to understand, at least in broad outline, how the growth of science has been related to the evolution of general history. . . . The teaching of technology suggests another application of the historical method, since it provides an opportunity for bringing discoveries and inventions into relation with the events of history and with the condition of society at different periods." He warmly recommended the reading of such a book as Mr. F. S. Marvin's *Living Past*. (The Board of English Studies in Mysore may take every credit for this discovery. We found it extremely valuable for the science students of the Central College.) Further he recommended the reading of good translations of the great literature of foreign lands, and the originals of the greatest literature of our own country. Moreover, he continues, "The student's knowledge of his own language may be best enlarged by its continual use as a medium of expression. He should be encouraged to present the results of his scientific reading and of his experiments in the form of essays, the excellence of which should lie in their clearness and accuracy of statement rather than in conscious literary form. There is no necessary connection between science and inelegance of expression, and in fact inelegance is usually a sign of looseness of thought." The carrying out of these ideas has been our conscious aim in teaching English to our B.Sc. students in Mysore.

Sir Theodore Morison, Principal of Armstrong College, Newcastle-on-Tyne, in his paper *The universities and training for administration*, sketched the ideal university life for training our future administrators. His advice cannot be gainsaid. "The modern universities," he said, "are deficient in the provision of the opportunities for a full social life in which the older universities are so rich. A university must be judged by the way in which it gives opportunities to its undergraduates for the full development of all their faculties, social and physical as well as intellectual. What is lacking to students in our modern universities [here he referred especially to the universities in

large cities] is more facilities for sports and athletics, more time for their clubs and societies, ampler opportunity for meeting and talking to one another, away from the dons and the lecture rooms. . . . We need to build halls of residence on the outskirts of the city in close proximity to the playing fields. . . . Their residential halls should be fairly close together in a university park, so that they may have frequent opportunities of meeting all the diverse elements which make up undergraduate society."

Enough, perhaps more than enough, has now been said upon this unifying concept of the ideal of university life, teaching and knowledge. I shall now content myself with a few cursory remarks upon some of the other papers. To all who wish to know how to succeed in filling the lecture rooms with the proper type of audience for lectures given to the general public within the walls of the university I commend the careful study of the paper read by Sir Gregory Foster, Provost of University College, London. Here they will see how much forethought, skill and organisation are necessary to ensure success. From this they will learn how lucky are those Londoners who desire mental culture, particularly the great army of school teachers within the metropolitan area. The paper of Dr. Whitehead, Professor of Mathematics, Imperial College of Science and Technology, upon *Science in general education* should be "read, marked, learned and inwardly digested" by all who control secondary education. The papers on *University finance* by Sir Alfred Ewing, Vice-Chancellor of Edinburgh University and Mr. George Adami, Vice-Chancellor of Liverpool University, will provide an interesting study to all who control the finances of that unavoidably expensive type of institution—the university. A few figures will interest the general reader. I quote the following from Sir Alfred Ewing's paper. "We may, I think, take that figure—£65 per head—as fairly representing the present cost of providing university education in the British Isles, when small institutions and those that are highly specialised, like the London School of Economics or the Imperial College, are left out of account. Of that sum about £34 is spent on the salaries and the superannuation of the teaching staff, and £6 on administration. About £25 of it is paid by the student himself in fees for teaching and examination, and £20 is provided in the form of parliamentary grants. But the future is uncertain in several important particulars. . . . It seems clear that there will be a permanently greater demand for the most expensive kinds of university teaching, in the subjects, namely, of pure and applied science. . . . If the purchasing power of the pound does not soon return to something nearer its old

standard there must be a revision of salaries, especially those of professors." Mr. George Adami made the following recommendation. "I would merely suggest that the autonomy of the university would be more secure if in place of the University Grants Committee being empowered to allot grants, whether recurrent or non-recurrent, according to their recognition of the need, there were established a fixed ratio, so that a university could be assured that, granted its income from fees were a given sum, it could obtain a definite equal grant from the Treasury." For an account of the varied sources of income and of the comparative costs in different English and Scottish universities I must refer the reader to the tabular statements in these two papers when available.

In his paper on *The universities and humanistic research* Sir Frederic Kenyon sketched the main lines along which humanistic research is needful to increase our knowledge. He stressed the importance of a well-equipped and up-to-date university library, both main library and departmental libraries, and of some archaeological equipment—casts, models, maps and occasional originals—and he emphasised the need for an efficient and adequate library staff. "It is a bad sign when a university regards its librarian as little better than a clerk, and pays him accordingly. The librarian should be an officer of professional status, with a standing in the councils of the university which allows him to represent the needs of his department with weight and authority. If he is not so, either the university has not provided itself with a library adequate to its needs, or it is starving the *personnel* that administer it." I quote also another very striking passage from this paper. "I have spoken of research or the study of the research of others. This alternative is applicable no less, I imagine, to science than to the humanities. Not every one has the necessary qualifications for original research. Research (if it is something more than the accumulation of statistics) demands gifts, not merely of industry or of willingness to learn and devise for the truth, but also of imagination and insight. I do not therefore urge that every teacher and every student should engage in research in the stricter sense of the term. Such a policy only leads to accumulations of facts mechanically collected and to much waste of time. . . . The remainder should be content to familiarise themselves with the results of research, and to exercise their judgment in the estimation of their validity and truth. The true researcher has not always the gift of exposition. He may lack literary expression. The very extent of his knowledge may make it difficult for him to appreciate the limitations of other men's minds; and a man with less originality of

thought may be the best exponent of his knowledge to others. There is always need for Aaron as well as for Moses." Dr. Joly, Professor of Geology and Mineralogy, University of Dublin, Trinity College, asked—"Is it possible successfully to teach research—to teach its methods and its spirit to the average student, whether of science or of the humanities?" Dr. Joly unhesitatingly answers this question in the affirmative. "But I would be careful to define that this does not imply the genesis of an original thinker from ordinary material. But it implies just as much as when we say we can teach students classics or mathematics. I plead, therefore, for lectures in our universities devoted exclusively to studies in research. And I would admit to these lectures students both of junior and of senior standing. Of course I am not now referring to systematic lectures in this or that branch of science. These are essential to the training of the average student. I mean something different. I would define research lectures as mainly relating to the professor's own experience and to that of his assistants and co-workers; each worker contributing one or more lectures to the university course in research. Their subject matter would relate to the objects aimed at by the research, the difficulties attending the work, and how they were surmounted. Such discourses might be supplemented by others of an historical or retrospective character. These might in some cases be delivered by honours students, and would refer to classic researches of the great masters. For recounting these, experimental illustrations should be given. There need be no extra call upon the professor's time. He would simply substitute these for part of his existing routine lecture work. I am aware that occasionally and at scientific associations within the university such discourses are delivered. I would make them a part of the sessional work of the university."

The papers of the last session of the Congress dealt with a very interesting question, namely "Sabbatic" leave for professors—the recognized right of leave of absence for one year in seven on full professorial salary. This year is known accordingly as the "Sabbatical year." It is in full working order in the University of Sydney. It is often called the "Harvard Sabbatical year" because the idea originated in Harvard. As Professor Wilson of Cambridge said, "there can be little doubt that it is in the universities of the U. S. A. that we find the system of definite and regular periodical relief from professorial duties most widely and most systematically recognized." If, then, America finds it expedient to adopt this course, it is obviously essential for the universities in the distant parts of the Empire to adopt it. As Professor Wilson argued, it is in the end the best policy. "In many subjects, if not

in all, a professor's effective value for the university and the community depends wholly upon his keeping up to the high-water mark of his subject, and this is—at least in many cases—impossible without maintenance of personal touch with the work of specialist colleagues in the laboratories and the libraries of universities elsewhere. Professors should not be merely given leave to go—they ought rather to be periodically hunted out of their chairs, for the health of their own souls and hence of those committed to their care.” He admitted, however, that to offer exactly similar privileges, under the same conditions, to all members of the university staffs is simply impracticable, however desirable in theory. Another speaker urged therefore that junior men should not be appointed to university staffs directly after taking their degrees, but rather only after going abroad for post-graduate work. It might be feasible to have some arrangement whereby junior posts in English universities might be found for graduates of colonial universities. This would not be quite the same thing as “Sabbatic” leave, but it would at all events give the junior men a better start. The financial and staffing readjustments made necessary by the granting of “Sabbatic” leave were considered. One speaker estimated that the whole scheme could be carried out in a college of average size at no greater cost than the establishment of a single professorship. All were agreed that universities should consider this one of the first charges upon their budgets.

I have endeavoured to bring out the salient points in the heterogeneous mass of our deliberations at this Congress. I trust the full report of the proceedings will soon be available. It will be well worthy of the closest study by all interested in universities and by all actually engaged in university work.

FRANK R. SELL.

## THE UNIVERSITIES CONGRESS, 1921.

### 2. THE TOUR OF THE UNIVERSITIES OF THE UNITED KINGDOM.

THE tour programme was a heavy one. A few intrepid souls ventured across to Ireland (Dublin and Belfast) but most of the overseas delegates chose the round—Reading and Bristol (June 25-28), Cardiff (June 28-30). This was, so to speak, a preliminary canter, for not all the delegates from overseas had arrived. This tour was only intended for those delegates who were to return to their spheres of work; but the visits to London and Oxford were for all members of the Congress, delegates and representatives from Home universities as well as from overseas. On June 30 we all met in London where the overseas delegates were the guests of the university, with much to see and do until July 5. Early that morning we proceeded by special train to Oxford, and at once plunged into our strenuous four days Congress. On Saturday July 9 the overseas visitors went to Cambridge as guests of the various colleges till July 12. On July 13 and 14 some of us were in Edinburgh, others in Glasgow; on the 14th the former party went on to Dundee and St. Andrews, the latter to Aberdeen. Back again to England on Saturday July 16, to Durham or to Sheffield for the week end. On Monday July 18 to Liverpool or Manchester, and finally on Wednesday July 20 to Leeds or Birmingham for two days. Visits to Aberystwith or Bangor from Cardiff had to be cancelled owing to the poor train service—the result of the disastrous coal-strike.

In this tour we were enabled to see universities of every age, type and size, ranging from the ancient seats of learning to the youngest and most energetic of the "Civic" universities such as are Bristol and Leeds. We saw the federal type in Wales, the affiliated type in Dundee and St. Andrews, Durham and Newcastle, where the two colleges in each case are, as with us in Mysore, separated by some distance yet near enough for considerable intercourse. The unitary type we saw in Liverpool and Leeds. In Reading we found a university in the making. The University College (typical of several other university colleges still to be found, yet perhaps more fortunate in site, endowment and personnel) has made such strides since its foundation some twenty years ago that it is very hopeful of a Charter in the immediate future.

and of being able soon to launch out into the deep waters of independence. The tendency in the federal type is towards growth in the federated units tending to separatism. In 1903 Manchester, Liverpool and Leeds were all strong enough to cast off the federal bonds and take up their individual careers as separate universities. Nevertheless they have much in common—particularly the common matriculation examination, in which Sheffield and Birmingham also share.

All these younger "Civic" universities, specialising as they do in some appropriate branch of applied science or technology, are anxious to escape the possible fate of becoming looked upon as merely efficient technical high schools—the Technische Hochschule—of the German type, by emphasising university ideals and university life such as obtain in the oldest of our English universities. They are all striving to get much residential collegiate life into working order as soon as possible in spite of the heavily adverse circumstances of the present. University College, Reading in this respect is peculiarly fortunate in its excellent site and generous founders: the halls for the men and the women students are first rate, beautifully built and well planned, and must exercise a very powerful influence on the students. Furthermore every care is taken to prevent any one hall from being monopolised by particular sets or cliques; rooms are allotted to students of all "faculties" to ensure a healthy mix up of types. This is, I am convinced, the right policy in all hostels. If Leeds were to find a Carnegie or a Rockefeller to-day it would be the finest of universities in this matter of residences—its plans for courts and halls on its wonderful new estate are most admirable. Meanwhile it has at least two halls for men, one of which stands in ideal country surroundings on the outskirts of its usual murky atmosphere. One of the most romantic of residential colleges is undoubtedly University College, Durham, a small college that has had the great good fortune to become possessed of the former Prince-Bishop's Palace—the Castle opposite the Cathedral on the same commanding hill. A magnificent baronial hall in which to dine and a Norman Keep in which to reside, to pass from one to the other down winding turret stair through tapestried gallery with antiquity and romance at every turn—this surely must influence for good the most modern young man in a hurry. It was a wonderful sight to look from the gallery window across the green sward of the Castle court-yard through the old gateway over to the finely proportioned Cathedral, in which repose the bones of St. Bede and St. Cuthbert. The Castle Chapel serves as a place of daily worship, reminding one that here at least is a modern university following the old Oxford and

Cambridge tradition. I surmise that the three small colleges on the hill at Durham must feel themselves queer yoke-fellows of the famous Armstrong College at Newcastle. It seemed to me a pity that there should be such a sharp unavoidable cleavage in circumstances and atmosphere between the two parts of this university. The same romantic atmosphere clings to St. Andrews with its more modern enterprising city yoke-fellow of Dundee. In this respect the parallel is close between the circumstances and the setting of Durham and of St. Andrews, except that in the latter place is one of the finest schools of research in chemistry whereas the hill top of Durham knows only the "humanities."

There is no need to consider at any length these last exceptional years of overcrowding and stress in the universities, due to after-war conditions. All the world knows what the Empire owed to its universities in the late war. Nevertheless, glad though the universities have been to do their best for the crowds of eager youth rushing into them since the Armistice, they all long for the day when numbers shall no more overwhelm them, making the teaching of some subjects almost a mockery and always a tremendous strain on the energies of the staff. Mere numbers are by no means a sign of a university's health. One point however that arose was the urgent need for State aid. The age-long question of freedom and autonomy in university life was then brought vividly before men. University finance was one of the subjects on the agenda of the Congress. I hope to give some interesting figures later on.

Another effect of the war has been to bring about a change in university policy. Now that German universities are more or less taboo to American and colonial students it was felt that British universities should definitely step into the breach and attract them to Britain. London took the lead in setting up a Ph.D. degree for post-graduate students. Most of the other universities are doing the same, though not necessarily in the same subjects. The general feeling about our Indian students coming over was that they should now come over as post-graduate students for these new degrees rather than as undergraduates. A strong commission is going out to India this autumn to consider the whole question of facilities for Indian students in British universities, and the equivalence of degree and qualifying examinations. One of its objects, I believe, is to find out how Indian universities may be improved so as to attract young men to graduate in them first before going abroad to continue their studies. The delegates from Indian universities took the opportunity to meet together and talk over these



matters. We resolved that it is desirable for the Indian universities to set up in India a universities bureau to co-ordinate necessary information; to keep Indian universities in close touch with one another and serve as a "clearing-house" for ideas and interests common to them, and thus to help the Bureau in Russell-Square and through it the various Home universities, who would appreciate an authoritative evaluation of Indian examinations and degrees. For example the varying values of school leaving certificates and matriculation and F.A. examinations in the different provinces of India are undoubtedly something that gives the Home university authorities pause in considering claims for admission. It is true that success in an F.A. Examination exempts a student from matriculation tests over here, but still a *viva-voce* examination is usually held to make sure that candidates are proficient enough in speaking and in understanding English speech to enable them to enter upon a degree course. Here I think Indian universities might combine to set up an adequate examination in spoken English, so as to enable F.A. students to pass straight into British universities without having this *viva-voce* business to go through on their arrival. It would save the authorities here some trouble and earn their gratitude. Again, if some more definite standard of comparison with the English school certificates could be set up, it would save much bother and hesitation. Otherwise it will be necessary for Indian students to pass matriculation examinations over here, which will be a nuisance to all concerned. Doubtless the commission will evolve some plan of solving the problem. The self-governing colleges in Oxford and Cambridge used in my day to put all candidates for admission, other than scholars and exhibitioners, through their own entrance tests, irrespective of Responsions or "Little-Go"; for one might actually be admitted to a college before passing these first steps towards a degree. The standardising of school-leaving examinations has, I believe, modified this practice. The crux of the problem really lies in the small size of the colleges and the increasing numbers knocking at their gates.

A college of 120 undergraduates feels that it has only room for one Indian each year, and it claims the right of rigid selection and previous interview, and where possible of some personal acquaintance; especially so when it turns away at least one, often two, out of every three English boys who apply. The Senior Tutor hates any jarring note in his small body of students; if he feels sure that the newcomer from India will "assimilate" easily and really become "one of the men," he will gladly let him in, but how severe this standard of selection is can readily be seen. If on the other hand the Tutor feels that the

newcomer from home or abroad will not "assimilate," he shuts the door, and there are many English lads who are thus debarred. The Tutor of course does not seek for dull uniformity of type, but he is looking for certain qualities that he considers essential to the end that all undergraduates should get the best that corporate life in a college should ensure. Thus it is that the corporate bodies of self-governing colleges in Oxford and Cambridge are hard to enter. Some colleges of course are more easily satisfied than others. Failure at one does not necessarily imply failure at another. Still entrance is not too easy for anyone, especially nowadays when there seems to be an ever-growing demand for university education. Lucky indeed is the individual who does get in. It is, of course, more possible and easier to become a non-collegiate student, and incidentally less expensive, though here again considerations of space and of staff also enter. But naturally enough every one prefers to belong to some college or other. Again it must be remembered that to avoid strong "cliques" it is the policy of all the colleges to admit Indians and (in Oxford only) Rhodes Scholars in numbers that bear a strict ratio to their own.

Before passing on to discuss the doings of the Congress itself, I should like here to touch discursively on some points of university outlook and procedure that interested me. At Cardiff we met some eloquent defenders of the principle of "nationalism"—almost I was going to say "parochialism," though those speakers would say I was thereby prejudging the issues. Briefly their plea was that the Welsh colleges should be staffed entirely by Welshmen, who alone really understood the Welsh temperament and so could, even if slightly inferior in academic qualifications, get the best out of their students. I am no psychoanalyst to estimate how many undesirable "inhibitions" may be set up in the Celtic soul by the "antagonism" of the foreign teacher. The upholders of this doctrine were Welshmen who spoke in all sincerity, and with many years of teaching experience among their own countrymen. But they were evidently in a minority, for many in that Council Chamber where these discussions passed maintained that universities should not thus limit themselves, but should attract the best teachers they could get, of whatever nationality, provided that these teachers possessed the ordinary virtues of gentlemen. Again, where practically all the students were Welsh it was thought highly desirable that a strong mixture of non-Welsh should be on the staff to avoid all the evils that are summed up in the word "parochialism." It was very noticeable how the younger English universities rejoiced when they could point to the ever-widening areas whence their students come, not merely as showing

their increasing popularity but much rather as helping them to get for their students a wider outlook and a larger experience.

At Cardiff I found a very interesting feature—a big-scale version of our “non-detailed” study idea—called the “General Course Examination.” Quite recently the college authorities determined to compel its “freshmen”—this term includes “fresh women”—to open their minds and get interested in something more than their set textbooks. At the end of the first year every undergraduate must satisfy the college examiners that he or she has done considerable “outside” reading of a general nature. If he fails, he must again undergo the test at the end of his second year. Twenty skilfully diversified sets of books, with about ten in each set, are drawn up. Each student chooses three sets and at the end of the year writes essay answers on three or four general topics out of a large range in his three-hour paper. No specific teaching is given for this general course, but occasional lectures are arranged each term on some of the scientific, literary, historical, political, economic and social topics suggested by these books. Attendance at these lectures is optional, but they are immensely popular. The students find this general course no drudgery but a real help. Thus the experiment is a great success. Each of the federal colleges in the University of Wales forms its own syllabuses; Cardiff’s example in this particular will probably be taken up by the others. At Leeds a special course in English Composition is arranged for all first year students in English, and it is now thought desirable that a course—lectures and tutorial classes—of this kind should be within the reach of all first year students of the university. Our Engineering College unfortunately makes no sort of provision for teaching English to its undergraduate members. At present in Leeds University there is a wise clause in their regulations for the Intermediate Examination: “A descriptive essay relative to the scientific and technical work of the candidates will be set . . . and will be examined by the examiners in English in co-operation with the examiners in the Scientific department concerned.” A student who fails in this portion must take it again at a subsequent Intermediate Examination. Again, the Institution of Civil Engineers say in their report: “Modern languages, especially French and German, should be studied and should be taught colloquially or in such a way as to give the pupils a practical knowledge of each language sufficient to enable them to study its literature and to converse in it with some degree of facility.” Surely then in Mysore we should at least teach English to Engineering students who have not already passed the B.A. Examination! How “Commerce” can be taught

so as to justify its acceptance as a study of university rank was the subject of a thoughtful paper by Sir William Beveridge, Principal of the London School of Economics. He urges strongly that Commerce students should be encouraged to read good literature. In universities where degrees in Commerce are given, the students are usually expected to have a reading, writing and speaking knowledge of one or two foreign languages. Should not Mysore students for the B. Com. degree be equally expected to have an efficient knowledge of two of India's principal commercial languages, to enable them to find work more easily over the length and breadth of India ?

I was interested to learn that at Leeds the candidates for honours in French Language and Literature have to spend the third term of their second year at the University of Caen, and similarly honours students of German have to spend this term in a German-speaking university. This is a wise provision. Honours students of these languages in other universities find it highly desirable—nay essential—to spend their long vacations abroad.

The principles and practice of Phonetics are now so well established that all language students and those training to be teachers receive instruction in the Phonetics of the particular language they study or are going to teach. The study of Philology has been rescued from the "dry-as-dust" category, and made thoroughly capable of imparting keen interest and enthusiasm to the student. The Christian missionary societies arrange for instruction in Phonetics to be given to all their missionaries in training. This eliminates more or less at the start all those who will never be able to learn languages, and enables the more promising to master their new language or languages with much greater ease and certainty. Excellent work is being done—under the guidance of Mr. Daniel Jones—at the school of Oriental Studies and at University College, London. All modern language teaching in the schools is now based on Phonetics and on what is usually known as the "Direct Method." The results under trained teachers are most gratifying. But here as elsewhere a little knowledge is a dangerous thing, and not all schools are careful to get properly qualified teachers. London is probably now the best, but not the only university where Phonetics is well taught. All Indian young men and women who come over here to study Arts subjects should be encouraged to learn the Phonetics of English and the main features of the Phonetics of the Indian Vernaculars, so that they can continue this study on their return to India and materially assist the scholars on this side. There is much scope for such work.

Both at Bristol and at Leeds the professors of Engineering were emphatic on the necessity for thorough "Works" training for all who wished to rise to a high position as engineers. The committee of the Institution of Civil Engineers also are unanimous in the opinion that engineering training must include several years of practical work as well as a proper academic training. Such a course of training would need at a minimum five years, and more usually six or seven years after the boy leaves school. Leeds requires that all engineering students shall have at least twelve months' practical experience in "Works" prior to taking up the course of instruction. At Bristol a very effective, though optional, scheme of dovetailing the practical and academic training has been evolved in collaboration with many firms and works. Professor Wertheimer calls it "The Bristol Sandwich Scheme:" the first ten months are spent in the university—then fourteen months in "Works"; ten months again in the university followed by two months in the "Works." Finally another ten months at the university followed by fourteen months in the "Works." The student must go through the "Works" like an ordinary workman, and do all the "dirty" work that ordinary workmen have to do. There is no "royal road" to engineering. We in Mysore are not in a position to do such things; it must be necessary for many years to come for the aspirant to high rank in engineering to go further afield.

An interesting feature at Liverpool deserves notice. The University Librarian at the opening of each session gives lectures to any students who care to attend on library matters: the arrangement of the library, the use of bibliographies, indexes, bulletins, elementary information about manuscripts, palaeography and printing, recent additions to the library and any other information that he considers essential in helping students to use their weapons effectively. Honours students in London are particularly fortunate—the Professors take them to the British Museum and show them the original *mss.* and detail many interesting points. To examine, under such auspices, a unique *ms.* such as that of *Beowulf* is a real pleasure. At Cambridge I spent a very instructive morning poring over many precious *mss.* in the library of Corpus Christi College with the learned librarian Sir Geoffrey Butler. A librarian in university or in college library must be a widely read scholar and well versed in the practice of modern librarianship. His office ranks with the professorship. Excellent training in librarianship is given by the School of Librarianship, University College, London. Theory and practice are effectively combined. Yet even now, according to one speaker at the Congress, some of the newer universities pay too little attention to the adequate maintenance

of their "armoury" both in the matter of books and of staff. Fortunately in the newly instituted post-graduate research degree courses arrangements are made enabling a student to "migrate" for definite periods to other universities whenever the particular phases of his research work demand particular library facilities.

I discovered at Leeds that the University reserves to itself the right to withhold admission even to one who successfully passes its matriculation examination if it considers him or her too young and immature. "Infant prodigies" are not wanted. Premature entry upon a university course is greatly to be deprecated.

FRANK R. SELL.



# THE MYSORE UNIVERSITY MAGAZINE

MARCH 1922.

## EDITORIAL.

ACADEMIC HONOURS.—Among those upon whom honorary degrees were conferred at the recent Convocation of Calcutta University were no fewer than four scholars belonging to, or associated with, this University. Sir M. Visvesvaraya, to whose enthusiasm its creation was largely due, was granted the degree of Doctor of Science, which degree was conferred also upon our Vice-Chancellor, Dr. Seal. Mr. S. Krishnaswami Aiyangar and Mr. R. Shama Sastri—both scholars of world-wide repute in the spheres of their special learning—became Doctors of Philosophy. It is with a good deal of pride that the University regards these honours, and it knows well how thoroughly deserved they are. It was courageous of Calcutta to create at one time three new Doctors in one university, but Calcutta knew that each one of them is worthy of such recognition by any university in the world. We welcome too this closer uniting of the two universities, already allied through our Vice-Chancellor.—Since these honours were conferred a Renter cable has announced that Mr. E. P. Metcalfe, the Principal of the Central College, Bangalore, had been made a fellow of London University. In an English university, of course, a fellowship does not mean simply membership of the Senate, but is a special recognition of scholarship. Mr. Metcalfe is a graduate of London University, and this recognition of his work as a student and of the research upon which he has been continually engaged since his graduation is exceedingly welcome in Mysore.

PUBLICITY.—In accordance with a resolution passed at the autumn meeting of the Senate, a very representative Publicity Board has been



formed, and much is expected of its work. One of its tasks is unblushing advertisement of the University's work for the good of the State. Here emerges an indirect advantage. It cannot be pretended that the University's services to the people in general are as yet so notable as they ought to be. The Board will always be demanding of the University more and more virtues to advertise, and this demand may urge and help the University in its tasks of the popularisation of knowledge and the fostering of technical industrial studies. Another duty of the Board is to help the public towards definite and sound ideas on the subject of education, especially university education, and to show how the constitution of the University is related to these ideas. Wrong ideas, coined in the mint of expediency, stamped with the impress of immediate utility, obtain easy currency. And many propagandists have a curious preference for foreign coin, which is sometimes counterfeit even in its own land. Certain forms of the vocational education doctrine—to choose, an example at random—are of a very taking glamour, seeming to solve great problems. People have to be reminded of those broad educational principles that cannot change—of that truth, for instance, that was vigorously expressed by Principal Laurie two or three years ago (Principal Laurie, a scientist, not a special devotee of “literary education”), when he said—“If we wish to find a perfect example of vocational education we must look back to the days of primitive man, when the child's education was vocational from the moment he was able to walk and speak, and the result of the vocational training was the primeval savage. To the extent to which the child's education has ceased to be vocational, and has been devoted to the general development of the child intellect, has civilisation progressed.”

It is, again, a duty of the Publicity Board to keep the public informed as to university policy by recording and annotating the proceedings of the Senate and the orders of Government on university matters. The press might be of incalculable service here. Outside papers cannot do much. Certain papers outside the State give admirably accurate and succinct reports, but have not space for more. More might be expected, however, from the papers of the State, whose criticism will be helpful, not unfortunate, if they make sure of their information, and, besides criticising, help us to keep the people informed of facts. May we express a certain grievance, in this matter, against what is presumably the leading paper in the State—the *Bangalore Daily Post*? From that paper a reader can learn very little about the University. On one occasion its report of a Senate meeting consisted of a huge manuscript speech, which had been delivered only in part

in the Senate. It was a good speech,—but not a record of the Senate's proceedings. But recently a much more extraordinary policy was adopted. A long memorandum (the work of an individual senator), and a huge correspondence, were published, and headed, of all things, "Mysore University Reform." Anyone has a right to prepare a memorandum (or as many as he pleases), and anyone has the right to utter educational ejaculations in a newspaper correspondence; but the heading was sadly misleading. The subject-matter was not really this University, but the miscellaneous educational ideas of many people, and particularly one, and the obvious assumption that our University (just constructed, on the basis of the most modern practice and experience) was a decrepit structure that must be reformed or totter was somewhat unworthy of the paper. A novel Senate met in the Y. M. C. A. in Bangalore and was addressed by a number of people. Of the proceedings of this rather widely representative body we were given a report so voluminous that it was spread over a number of days. Of the succeeding meeting of the *University* Senate the report consisted of—not one word!—The whole business, so thoroughly reported, so warmly encouraged, was such as to give the general reader an altogether absurd idea of the constitution, the policy, and the mentality of the University. But this was a process of thorough and skilful advertisement, and the University must imitate, not the method, but the thoroughness and the skill. And may we not hope for assistance, instead of such injury, from the press?

Finally, criticism has to be weighed, and either accepted or answered, and slander has to be immediately refuted. Here again one is driven to ask—what ails the *Daily Post*? That paper contained recently a paragraph giving publicity to, while expressing doubt regarding, a most scandalous allegation against the Maharaja's College Council. It was a report which, to anyone possessed of even the slightest information, was obviously absurd; nor does the expression of doubt justify the use of scandal. One is puzzled to account for this proceeding on the part of one of the most sensible, and one of the most scrupulous, papers in the country. Again one would venture to ask for a change of attitude—for criticism with careful verification of fact, and for other help besides criticism.

SECONDARY EDUCATION.—In arranging to publish Mr. S. Kesava Iyengar's very interesting article on this subject, we obtained his permission to quarrel with him, which, *con amore*, we proceed to do.

Mr. Kesava Iyengar's idea is, of course, to make citizens. Well and good; but "citizen" is, after all, a comparatively narrow term. A prior necessity is to make men. Well informed and vigorous citizens are frequently unsatisfactory men, and therefore, despite knowledge and vigour, *unsatisfactory* citizens. Further, "citizen," though a comparatively narrow term, is somewhat too broad for what would be the product of Mr. Kesava Iyengar's scheme of high school, or upper secondary, education. The compulsory portion is essentially a system of political training, and its result would be the politician. To produce politicians is far from being the true aim of general education. With Mr. Kesava Iyengar's dominating idea of training people to take more interest, and a more intelligent and more active interest, in Government and the affairs of state, no one could quarrel; but he seems to us to divert education from aims of prior importance, besides setting before all men a goal (and that to be reached too easily) that by no means all may rightly seek.

In insisting upon constitutional and economic studies much is omitted. To mathematics and science we refer later. Now as to language and literature. The editorials in this Magazine have for years been a perpetual comment on this matter, but reiteration cannot be avoided. In the high school course compulsory English is to consist of "Composition only," and, not to speak of literature, no other *language* need be studied! As for literature, it is contended that "post-scholastic days" are the time for its study. How, when, where, by whom guided, related to what background of knowledge? "The vernacular literature prescribed must serve the purpose of an adequate introduction." Yet compulsory vernacular studies, present in the lower secondary, are to be absent from the high school course! There seem to be two radical errors here. First, literary, as distinct from merely grammatical, studies are not realised to be absolutely essential to all general education. They should begin at the lower secondary stage and proceed without intermission thereafter. Second, it seems to be thought that adequate mastery of the vernacular *language* can be attained by the end of the lower secondary course, which is infinitely far from being the case. The general student is to be allowed to ignore all literature (including that of his own country), and halt in his own language, that he may become the possessor (never in these circumstances the intelligent apprehender) of constitutional and economic facts. Further, *history* is to be ignored except by those who are to specialise in it. How can anyone intelligently study constitutional, or even economic, matters without a prior, or at least concurrent, study of history?

Such a procedure can but lead to incoherence and falsity of view. A very large amount of current political error is due precisely to this process on the part of men. Shall we definitely encourage the unbiased, unrelated judgment in the case of boys at school?

Equally serious, we think, is the error made in the drafting of optional groups. Each leads exclusively to a particular profession (or rather, kind of profession), and each is considered valuable simply in relation to that profession. Education is not thought of: the way to a "vocation" is to be made plain. The small boy is to decide, when entering his high school course, or the superhuman insight of his parents is to decide for him, what his aptitudes are, and "what he will be"; and the choice will be practically irrevocable. No such choice, of course, can be made: aptitude, as a rule, takes much longer to show itself decisively. And supposing that in some given case it did show itself, and that the signs of the carpenter were already manifest in the boy of fourteen,—why should the poor little fellow thus be hedged in by his carpentry and the rattan-work which, no doubt, he will "choose" with it? These subtly humane studies are to do, presumably, the educating that, as we have seen, his "compulsory subjects" cannot do.

To read the newspapers intelligently, to vote wisely, and to engage in social service—these are the capacities at which the system is said to aim. The first two seem to depend on rather profounder considerations than are contemplated in Mr. Kesava Iyengar's course. As to social service—that must arise from love and consecration. These virtues demand an inward nurture which this course does not give but expressly denies.

ELEMENTARY MATHEMATICS AND SCIENCE FOR ALL.—In the Mysore high school course (S.S.L.C.) Elementary Mathematics and Elementary Science are compulsory subjects, and enter into the public examination. This arrangement we believe to be absolutely essential to the educational value of the course. Some would change it, and their objections are two—first, that such studies are not in most cases of practical utility, and second (a less superficial objection) that they are not "humanist," bear no enlightenment as to human life and association. Mr. Kesava Iyengar quotes a very interesting passage from Viscount Bryce, culminating thus.—"Has anyone at a supreme moment of some moral struggle ever been able to find help and stimulus in the thought that the square described on the hypotenuse of a right-angled triangle is equal to the squares described on the two other sides thereof? That which

explains man himself has after all the deepest interest for us."— Such narrowness of view is strange in that writer. The function of education in moral development has indeed been neglected in some degree, but that is no excuse for now ignoring totally its function in intellectual development. It is not the theorem proved but the process of proving that matters. There is nothing in the intellectual part of education more valuable than training in the precision of mathematical process. It works against haste, vagueness, incoherence, and it is most necessary to those who take to it least kindly. But indeed it has a moral value also, for its coldness is the most bracing of tonics, and its severity is something of a discipline for conduct as for thought. In a day of rather vague enthusiasms and rather hypnotic ardours it is of paramount value. As to science studies, Mr. Kesava Iyengar seems to think they are to be judged merely by their subsequent *usefulness*, and should cease to be "compulsory" because they are *useful* to few ; and he leaves unanswered (for they are unanswerable) the words in which the Calcutta University Commission show the value to *every student* of introductory studies in science. It is no answer to say that other studies also are essential. If so, introduce them ; but one essential cannot oust another.

MISSIONARIES AND THE CONSCIENCE CLAUSE.—The Rev. W. Meston, Principal of the Madras Christian College, said recently in the Madras Legislative Council that the adoption of a Conscience Clause " would result in a considerable contraction of educational activity." This bare statement of fact *The Servant of India* describes as a " threat," and declares angrily : " We can only say that it is very un-Christian for a Christian to say so, though it will not be altogether impossible for Indians to arrange for their own education." We are rather surprised both by the matter of these remarks and by the spitefulness of their tone. To begin with, the last words invite the retort. " Why then did they not do so long ago, thus avoiding this hateful missionary influence? It was only a question of money and devotion." Nor is even *The Servant of India* competent to instruct Mr. Meston in the principles of Christianity, and such gibes are a sign of notable weakness. But what most surprises one is *The Servant of India's* ignorance of the inevitable conditions of missionary work. This work is financially supported by missionary societies in Christian countries. These societies are financed by voluntary subscriptions, which are given not primarily for the education of the youth of India (the people of a

country ought to finance its own education) but for the spreading of Christianity. This is, therefore, an essential object even of the educational part of missionary organisation in India. There is very little Christian propagandism in missionary schools and colleges—so little that subscribers in western countries are often disposed to criticise. But the missionary aim is to spread the knowledge of Christianity, and the spirit of that religion. (We are not concerned with the question whether the missionary aim is right or wrong.) This is a presupposition of all the work of religious missionary societies, and it is felt that were Christian instruction to be eliminated by the Conscience Clause the *raison d'être* of missionary colleges and schools as *missionary* colleges and schools would disappear, and missionary funds could no longer be spent upon them. Thus it is inevitable that the adoption of a Conscience Clause should result in a contraction of the educational activity of missionaries. This no doubt they would deeply regret, for they love the work and the people. But they cannot spend upon exclusively secular education funds subscribed with other intentions. Nor indeed is this the purpose with which they became Christian clergymen. It would befit their critics to acknowledge their self-sacrificing labours; and if these critics wish to ban Christian teaching they must substitute for these labour and sacrifice of their own.

A TAGORE CONTROVERSY.—Since the publication of his admirable *Life of Rabindranath Tagore*, which was reviewed in our last issue, Mr. Thompson has been bombarded with all sorts of criticism, from varying kinds and sects of people. One of the most interesting of the reviews of his book was that by Mr. M. Venkatesiengar, in *The Indian Review of Reviews*. Mr. Thompson replies briefly to this criticism in a letter to the editor of that journal. The chief point at issue is the nature and extent of the influence of Christianity upon Rabindranath. Neither Mr. Thompson nor Mr. Venkatesiengar brings us anything like satisfaction on this point. We need the poet's own testimony; a complete analysis of environment and influences; and an elaborate and absolutely detached scrutiny of all that the poet has said and written, with allowance for circumstance, need, purpose and artistic conception; No conceivable task could be more difficult than such assessment of influence. Mr. Thompson writes: "What is best in *Gitanjali* is an anthology from the ages of Indian thought and brooding; but it is the sum of Christian influence that has brought these buds into flower." \*

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\* *Rabindranath Tagore*, p. 101.

Here we have a positive and very definite statement, which, whether true or erroneous, is far from being justified by such evidence as he adduces. It is a statement which instantly antagonises Hindu critics. Mr. Venkatesiengar's reply is even less satisfactory. He, of course, was not writing a book, even a short one, and he could not say much. But what he does say takes us no further. To Mr. Thompson's contention that Rabindranath's *Gitanjali* does not represent the teaching of ordinary Hinduism he replies that not "ordinary" but the noblest and purest Hinduism is what is to be sought there, and he conceives that the atmosphere of Rabindranath's poetry is one of belief in the cardinal doctrines of Hinduism. Mr. Venkatesiengar is extraordinarily vague here. With reference to the doctrine of Karma, for example, he quotes only one passage—and that not in *Gitanjali*!—and even of this all he can say is: "This sounds very much like the Karma doctrine of Hinduism." This passage runs—

"I ask my destiny—'What power is this that cruelly drives me onward without rest?' My destiny says—'Look round.' I turn back and see it is I myself that is ever pushing me from behind." This passage might equally well have been written by a Christian poet: it contains absolutely nothing of the *distinctive* elements of the Karma doctrine. Mr. Venkatesiengar adds—"Passages with a suggestion of this can be seen in the *Gitanjali*." A suggestion of *this* suggestion would be faint indeed. Mr. Venkatesiengar proves nothing here. But even if he could prove that Rabindranath definitely held the doctrine of Karma in its most contra-"forgiveness," contra-Christian form, we should be no nearer a proof that in some other important matters Rabindranath was uninfluenced by Christianity.

Mr. Thompson mentions particularly the idea of the Fatherhood of God. He says definitely: "One Christian doctrine has profoundly influenced Rabindranath, and that is the doctrine of the Fatherhood of God."\* Mr. Venkatesiengar holds, on the contrary, that the idea came to the poet through the Vaishnava poets, and through the habit, fostered by them, of regarding poetry, religion and life as one. "To this tradition of bringing God into the things of daily life the poet owes his conception of God as father, lover and friend." To this Mr. Thompson replies: "I selected the Fatherhood of God as a Christian teaching that had influenced the poet, for two reasons. First, because the poet himself constantly refers to this doctrine as one which he greatly values in Christianity. There is no other Christian doctrine to which he refers with anything like this frequency and this appreciation.

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\* *Rabindranath Tagore*, p. 102.

Secondly, because Bengali thought—with which I am more familiar than with South Indian thought—seems to me to think of God more naturally as Mother than as Father. Now, Tagore does not. It is notorious that he is no lover of the *Sakta* cult which is so popular in Bengal. I think my inference was a fair one, that it was in this doctrine that Christianity had touched him most.”—Mr. Thompson is a great deal more definite than his critic, but neither even begins to do the one thing necessary. In Christianity the Fatherhood of God is a precise idea, with a number of precise implications. If we are to decide as to the influence of Christianity at this particular point we have to ask two questions. First,—is the influence of that idea, and of these implications, definitely visible in Rabindranath’s work? Second—if so, is there anything in the Vaishnava hymns, or in that tradition, which may have exerted that precise influence? Till these questions are answered, with specific references, we are merely groping round the subject; and similar questions must be answered with regard to other Christian elements which some find in Rabindranath’s work.

One of Mr. Venkatesiengar’s criticisms seems rather unfortunate. “When he (Mr. Thompson) speaks in an apologetic tone both of the West and of the poet in commenting on the poet’s waning popularity with Western readers, we feel that he is looking at the poet’s work from the wrong standpoint. That the poet does not receive from his Western readers the attention that he once did should, if true, give us sorrow on behalf of the West, but hardly, we think, on the poet’s behalf. To the people of this land he is still—as he has been for long—the first among poets and writers; and if he has ‘suffered a slump’ with people of other lands, it does not much matter.” This is a curious point of view. Rabindranath is a considerable reconciling influence between East and West. Further, every first-rate poet has a responsibility to mankind in general, as to his own land; and when he concerns himself, as Rabindranath has done, with the publication of his work in a foreign tongue, this is an acceptance of the responsibility. As Mr. Thompson points out, a great deal of what Rabindranath and his publishers have given, as his, to the English speaking world represents him wrongly and with that kind of incompleteness that might easily have been avoided. Further, little attempt was made at interpretation, even by way of absolutely necessary chronological explanation. Thus the influence that was his duty was impeded, and his poetic gift to the world in general was in great measure denied. That *he* should suffer in reputation matters little, but a great poet’s reputation is not his own to play with. And it is to be remembered that even in the greater part



of his own land he is known only through these English translations, and thus that unjust treatment of the West of which Mr. Thompson complains reacts with much severity upon India also.

The avalanche of criticism which has fallen upon Mr. Thompson has apparently made him dubious about publishing his larger and more fully critical book. "If," he writes in the letter referred to, "we are to get an adequate judgment of Tagore's work, Indians must help much more than they have yet done. No Englishman can criticise and understand certain sides of him as an Indian can do. I had hoped to write in far fuller detail a criticism of his poetry alone, and had finished the first draft of this larger book. But I do not feel qualified to complete this." We very earnestly hope that by this time he has resolved to complete and publish it. Even those who have disagreed with him profoundly have been exceedingly grateful for the small book. The large one is sure to meet with equally strenuous criticism, but we *cannot do without it*. Surely it would be possible to obtain Indian criticism—even collaboration—before it is published. Mr. Thompson's knowledge of the works in their original Bengali form, his personal intimacy with the poet, his power of appreciation and judgment, with the enormous amount of toil he has already expended upon this study, make him a first-rate authority, and he must not deny us the fruit of his labour.

## THE GROWTH OF PSYCHOLOGY.

### (II)

#### THE REALM OF THE UNCONSCIOUS.

It was not a mere accident that in Western philosophy psychology was till lately usually defined as the science of consciousness. Even to-day the tradition has not completely died out, though it is steadily but surely receding into the background. It represented a definite view of life, regarding the conscious as the highest manifestation of life. But to-day it is symptomatic of the changing vision of psychologists that consciousness is no more regarded as the end-all and the be-all of psychology. The existence of the unconscious is more and more established; the conscious itself has come to be known as but one phase of the unconscious. Thus it is that the psychology of the unconscious has become the New Psychology, and the centre of gravity of psychological studies has come to be shifted from the conscious to the unconscious. From the stand-point of Indian philosophy it has been an oft-repeated charge against western metaphysics that while Indian philosophers have studied experience as comprising *jagrat* (waking life), *svapna* (dream) and *shushupti* (deep sleep), not to mention the stage of *turiya* (complete absorption in *Brahma*), the western philosophers have been content with a study of the conscious or waking life only. The criticism has been well deserved. For centuries it was a perfectly fashionable view to treat sleep as a mere negation of conscious life, and dreams as the inexplicable meaningless vagaries of sleeping life. But at last the scientific instinct of the west in its insatiable thirst for the curious and the seemingly inexplicable brought it face to face with phenomena, which cannot by any subtle manœuvring be squared with consciousness, and the hypothesis of the unconscious became inevitable. But the hypothesis of yesterday has become the theory of to-day. The west has after all attained a stand-point, which has already revolutionised medical practice and educational ideals, political theory and criminology. And if it has not yet tangibly affected metaphysics, the day perhaps is not far distant when it too will find its hands forced to transvaluate its values, and to look upon the unconscious as not necessarily of lower value than the conscious.

The history of the New Psychology may be dated back to the days of Mesmer, whose name has been immortalised in mesmerism. He may have been "at once discoverer and charlatan," but he tapped the unconscious by showing that a person could be mesmerised so that his normal conscious life is put into abeyance and his will is subjected to the will of the mesmeriser. The phenomenon of mesmerism is better known as hypnotism: an artificial sleep produced, it was supposed, at the suggestion of the hypnotiser. For long it was thought that the will of the hypnotiser was the central fact in hypnotism. Braid who was the first to coin the expression "hypnotism," lent currency to the view that hypnotism was physiological rather than psychical. At one time it was even thought that hypnotism was essentially morbid in its nature, as was held by Charcot and the Salpêtrière school. But ultimately the views of the rival school of Nancy under the leadership of Liébault and Bernheim have triumphed, and hypnotism has come to be known essentially as a means of waking the unconscious. How this idea of the unconscious was necessitated we shall see later. Suffice it for the present to say that the hypothesis of the unconscious became a means of shedding light on little-known phenomena like somnambulism, hysteria and various kinds of psychic phobias. It was at this stage that the genius of Freud elaborated the view that the unconscious is the ever-present endowment of the most normal individual, and that sleep and dream are the stages for the unconscious to come to light in however fantastic a fashion. Further he showed the play of the unconscious in wit, in the taboos of human life and the ordinary forgetfulness and mistakes of our every-day life. Freudian psychology, even when all its exaggerations have been accounted for, remains one of the most epoch-making landmarks in the history of human knowledge. His school is known as the Vienna school, as distinguished from the Zurich school of Jung, who beginning as a pupil and follower of Freud soon came to develop marked differences of view from his master, and thus Jung figures in the psycho-analytic literature of to-day as a friend and critic of Freud. Psycho-analysis is the method of probing to the unconscious and is aptly spoken of as the surgery of mind. As often happens the method and its results are not always rigidly distinguishable, and it would not be unjustifiable to regard psycho-analysis in its broad sense as the theory of the unconscious and its manifestations. We shall now proceed to study the unconscious as it came to be discovered in successive departments of human life. After that we shall briefly review its metaphysical implications and discuss its place in the realm of human knowledge.

## I

In the life of men sleep comes so easily and naturally that we can well imagine how the discovery of induced sleep must have come as a great surprise. It must have come as a still greater surprise that a person in the state of such induced sleep can be made to undergo various activities even of the oddest sort at the sweet will of the inducer of sleep. The surprise could not have ended there, when the person in his wakened state was found to be genuinely unconscious of all that he had been made to do and had actually done. Naturally the first conclusion drawn was that the hypnotist had some mysterious power by which he could put people to sleep, and then bring them under the authority of his will. It was soon found that the power of a hypnotist is nothing mysterious, that in the last resort it is due to intense concentration. But it took a much longer time for people to be convinced that the person hypnotised had also to exert his will and by force of concentration on the passes of the hypnotiser or any bright object allow himself to fall into sleep. The secret of this was to cut off all possibility of mental distraction and thereby induce a vacant state of mind, on which sleep could naturally supervene. The characteristic of this sleep is an intense suggestibility to the commands of the hypnotiser.

From the stand-point of psychology it was a discovery of the greatest importance that a person can do something without being conscious of it, *i.e.* human life transcends the conscious, and this has been again and again shown by post-hypnotic suggestion. The hypnotiser not content with suggesting something during the state of hypnotic sleep suggests to the hypnotised *e.g.* that he shall awake at 2 p.m. and that at 4 p.m. he shall smoke two cigars. The person awakes at 2 p.m. and towards 4 p.m. although a non-smoker feels an intense desire to smoke and does smoke two cigars at 4 p.m. It means that all the actions of our waking conscious life are not the result of our waking conscious life. It distinctly points to the existence of the unconscious.

A deep study of hypnotism has been one of the most marked contributions of France to science. Charcot's practice having been mostly confined to hypnotism among hysterical persons, he tended to regard suggestibility to suggestion as being due to hysteria. But Bernheim made it abundantly clear that hypnotism is a phenomenon that could be induced in 90 per cent of ordinary hospital patients. From this he tended to draw the conclusion that all hysteria is practically due to suggestion, an idea that has since been accepted by the great Freud with this proviso that the suggestion does not work in the open, but rather insinuates itself unconsciously. The work of the old Nancy school of

Lebault and Bernheim has been magnificently continued by Edonard Coué, whose views have been expounded by Charles Baudouin. Mr. and Mrs. Cedar Paul have rendered a distinct service by publishing a translation of Baudouin's work "Suggestion and Auto-suggestion, a psychological and pedagogical study based upon the investigations made by the new Nancy school." In one of the previous numbers of this Magazine we had occasion to notice it briefly, but we gladly come back to it for a fuller presentation of its teaching.

Suggestion *prima facie* implies two parties at least. But Coué's work shows that no suggestion is possible by mere force of somebody else's will until and unless we make his will our will, his suggestion our suggestion, so that in the last resort the strength of suggestion is reducible to that of auto-suggestion. But this auto-suggestion mostly works unconsciously, and therefore there is a justification for defining suggestion as "the subconscious realisation of an idea." From this stand-point Coué's work rests on three main foundations: auto-suggestion, the law of reversed effort, and a reflective control of the subconscious.

Hypnotism is now found to be independent of sleep. In its old sense, it has already gone out of fashion, for the same results can be brought about by a powerful suggestion, and since this suggestion is reducible to auto-suggestion, the necessity of a suggester becomes nothing more than a mere instrument for evoking auto-suggestion and thus becomes superfluous, when a person has attained the stage when he can suggest himself without any external aid personal or impersonal. But this is a stage not easily attained. It requires a knowledge of the technique suitable to suggestibility, and Baudouin devotes a short but instructive chapter to a delineation of the laws of suggestion.

(1) The law of concentration implies that "the idea which tends to realise itself in this way is always an idea on which spontaneous attention is concentrated." The weakness of our normal waking life is its openness to various stimuli, and our attention tends to be dissipated, and yet, as even empirical psychology shows, attention is a necessary preliminary to any achievement. It means that when steps are taken to reduce the range of our suggestibility by staring at a bright object or the passes of a hypnotiser, the mind is rendered vacant and a passage is made for the dominance of some particular suggestion. In course of time by force of habit a person may automatically render his mind vacant and thus concentrate on some particular auto-suggestion.

(2) The law of auxiliary emotion that "when for one reason or another, an idea is enveloped in a powerful emotion, there is more likelihood that this idea will be suggestively realised." The power of emotion is one of the most curious traits in human psychology. Whenever a particular emotion predominates, it automatically suggests interpretations of most indifferent ideas and experiences as if they were really connected with that emotion. It is notorious how a lover reads a depth of meaning in every wave of his beloved's hand, and how every courtesy on her part is looked at as tinged with the colours of love. Baudouin mentions a case of a paralytic who in 1915 living on the fifth story when an air raid occurred found herself in the porter's lodge on the ground floor without her knowing how it happened. The fact was that the explosion of a bomb close by had so frightened her that under the mastery of fear she fled downstairs. Croce mentions a similar case of a paralytic who had himself brought to the market-place on the shoulders of a man; in the meantime there was a popular tumult, and the paralytic was so seized with fear that he had the energy to take refuge right at the top of the Campanille! Some years ago a similar incident happened at Bombay. A procession was passing along the street and a young Hindu lady was looking at it from a window. One of her arms was resting on a window-sill. She continued in this position so long that her hand became stiff, and nothing availed to set it right. A European doctor was called in, and a happy thought of an experiment struck him. He requested to be left alone with the girl. The relatives reluctantly consented. As soon as they had left, he made a dart at the folds of her *sari*; the girl in her fright put down *both* her hands in self-defence. The cure was effected! Cases of this sort have been well-known and bear an eloquent testimony to the motive power of emotions, by which a worrying invalid is rendered worse, and self-confidence brings success. A powerful emotion effectually drives out all competing forces and an intense concentration becomes possible. The second law reinforces the first.

(3) The law of reversed effort that "when an idea imposes itself on the mind to such an extent as to give rise to a suggestion, all the conscious efforts which the subject makes in order to counteract this suggestion are not merely without the desired effect, but they actually run counter to the subject's conscious wishes and tend to intensify the suggestion." Few persons can have failed to realise the truth of this law in their own lives. Very often we seem to be helpless puppets of our own ideas, and any deliberate attempt on our part

to root them out only helps to bring them before our consciousness in a more vivid form. In other words we can prepare our mind for suggestion by a thorough indifference to all the thoughts of our normal life.

(4) The law of subconscious teleology that "when the end has been suggested, the subconscious finds means for its realisation." As we shall see more fully later on, the unconscious is not something abnormal or unusual, it is perfectly normal, it subsists and works in its own way just as much as the conscious. The unconscious is not irrational, but perfectly rational, having its own end and realising it through its own means, as Freudian psychology has more or less successfully established. But it would be a fatal mistake to proceed on the assumption that the conscious and the unconscious work alike.

Nowhere perhaps do they differ more markedly than in the part which volition plays in their respective spheres. Volition is inseparable from conscious life. But, to adapt Butler's language, will is not so powerful *de facto* as it is *de jure*. Imagination and emotion are more powerful than volition, and the power of volition asserts itself only when it is adequately reinforced by the forces of emotion. This is a truth which moral philosophy has often neglected and in consequence has stagnated in the swamps of an arid intellectualism. But the psychology of our day gives substantial support to Coué's idea that "in the conflict between the will and the imagination the force of the imagination is *in direct ratio to the square of the will*." Further our efforts at reform through will have a powerful opponent in the law of reversed effort. Therefore it is that the new Nancy school insist that will cannot be reformed through will. This reformation is to be brought about through auto-suggestion working not through our will so much as through the unconscious. But now arises the difficult question: how can the unconscious, which *ex hypothesi* works unconsciously, be made to subserve the end of a conscious reformation of will?

Perhaps this is a convenient stage to make a brief halt over an important question of terminology. Language has always been the despair of philosophers, and truly responsible for half the philosophical disputes that have raged in the world. In the literature of psycho-analysis the terms "subconscious" and "unconscious" have been used very indeterminately. Baudouin defines the subconscious as "a storehouse of the memories that have lapsed from the ordinary consciousness, of the wishes and sentiments that have been repressed, of the impressions of a distant past." Freud and Jung use the unconscious to mean just what Baudouin understands by the subconscious, and yet the two

terms should really be used in two distinct senses. If we make the threshold of consciousness the starting point of our thought, we find that all that is above this threshold falls *within* our consciousness: the actual content, *e.g.* the particular sentence I am now penning, the object of consciousness, *viz.* the subject matter of this paper, and the fringe of consciousness, *e.g.* the walls, books and other arrangements of the room in which I am now writing. But although I am engrossed in the present, I remember a good deal of my past experiences, any one of which can at any moment rise above the threshold of my consciousness and capture my consciousness. All this is *below* the threshold and the term "subconscious" may fitly be applied to the range of memory potentially conscious. Over and above this every person carries within him memories lost to his consciousness, but which are not really lost. They have lapsed or they have been repressed. They are truly the unconscious. They fail to rise to the level of the conscious, and their existence can be revealed through psycho analysis. Henceforth whenever the terms *subconscious* and *unconscious* are used in this paper they will be used in the sense above defined, and now we shall revert to the question raised at the end of the preceding paragraph.

The secret of getting at the unconscious is to lull the conscious to a vacant abstraction. This is brought about by "a relaxation of attention and inhibition" and those in whom this relaxation through muscular fatigue is brought about more easily, as *e.g.* in women and children, find it easier to get at the unconscious, while there are others who have a special gift which makes them peculiarly sensitive to the unconscious such as the people who distinguish themselves in sensory or motor automatism.

The importance of Baudouin's work lies in the fact that he does not treat the phenomena of auto-hypnosis and auto-suggestion as esoteric, but expounds in a lucid way the method of it. Thus the first stage is collection which is defined as willed relaxation. Such a relaxation can be brought about by immobilising the body, *i.e.* by relaxing the muscles and thereby relaxing the muscles of attention.

Such a *collection* would at first lead to a reverie with a consequent diffusion of images and ideas, but gradually there arises a certain unwilling fixity of attention on a particular image or idea. This state is what is called by Baudouin *contention*, which is defined as a psychological equivalent of attention minus effort. It is neither "attention" as ordinarily understood nor complete relaxation. It is in such a stage that auto-suggestion works with the greatest effect. Even in normal life the stage of contention is afforded by the moments between sleep



and waking. It is in such moments that the unconscious can crop up, and the field is clear for suggestion and auto-suggestion or auto-hypnosis. This fully developed stage is spoken of as concentration, "a state of auto-hypnosis and of persistent contention with one idea, the auto-hypnosis having been induced by the lulling influence of the idea on the mind."

Baudouin's book is nothing if not practical, and abounds in rules and suggestions for the practice of auto-suggestion, and not the least interesting portion of the book is that in which he gives instances of remarkable changes and cures brought about by hypnosis, which in the last resort is auto-hypnosis. That vicious habits and nervous phobias can be cured by hypnosis, and that they can be cured only by hypnosis may now safely be regarded as one of the orthodoxies of the medical profession. But Baudouin goes a good deal beyond others in boldly claiming for hypnosis a power to cure even functional diseases. Indeed the chapter entitled "Concrete Results (Suggestion and Psycho-analysis)" is so fascinatingly surprising as to read like a chapter in Grimm's Fairy Tales. Stating two exceptional cases in which hypnosis fails, *viz.* persons mentally so undeveloped that they cannot understand what they are told, and persons who are intellectually high, but cannot concentrate their attention even for a few seconds, Baudouin makes bold to assert that any disease, mental or physical, is curable by hypnosis. Cases of metritis and salpingitis, and tuberculosis, and two cases of Pott's disease are mentioned as samples of hypnotic triumph. Among other diseases so cured are mentioned enteritis, eczema, deafness, an affection of the frontal sinuses. In all these cases regular medical drugging and operations had been tried, but conspicuously failed. Hence all the greater wonder, and all the greater credit, attaches to hypnotic cure. But it may be as well to keep an open mind on the question and not conclude that hypnosis is the beginning and end of all medical practice.

But there are cases where even physical pains are purely auto-suggested, and so are easily curable by auto-suggestion. No medical practitioner can have failed to come across such cases, where half the troubles of a patient are due to a morbid imagination. Within my own knowledge I have known doctors giving pills of mere flour, when the patients insisted on being drugged and I have known doctors injecting water when the patient would not sleep without an injection of morphia, and it is hardly necessary to speak of the results brought about, the immense curative powers of simple  $H_2O$ !

In short it is too late in the day now after the efforts of Forel and Bramwell, Liébault and Coué to regard hypnotism as the badge of a

charlatan or as a piece of ingenious jugglery on a music hall stage. It may be an induced phenomenon, but it can exist also in a natural form. Cases of fascination whether by men or beasts, obsession by ideas, or neurasthenia are all hypnotic at bottom. That fascinating story of Trilby and Svengali\* need not be exactly conceived as a case of induced hypnotism. It can better be interpreted as a case of weird fascination, a power of singing, a remarkable sweetness of voice developed through auto-suggestion under the domineering personality of Svengali.

But if hypnotism is a fact, the only key to its solution is the existence of the unconscious.

## II.

Another interesting phenomenon known for a long time is somnambulism. Some persons have got the curious power of performing a number of intricate actions during sleep. Walking about in sleep is not very uncommon, and this habit easily develops into opening doors, walking out to most dangerous places at night with a firmness of step most remarkable. Persons have been known to be walking during sleep on precipitous edges—and without any mishap—from which they would have recoiled with a shudder during their waking moments. For years this sort of somnambulism was considered a psychical mystery. But now the discovery of the unconscious solves the mystery. During sleep it is only the conscious that sleeps; the unconscious continues as active as ever, or rather is more active in the absence of the competing conscious.

This fact is more clearly brought out by a somnambulist who can carry on a regular conversation during sleep. Years ago there used to be a servant in our family who was given to this trait. As a result it was impossible for him to keep any secrets. It used to be a regular delight with the young men of the family to go near him when he was sleeping and put questions, which were regularly and coherently answered. In the mornings he was always left wondering how the boys got to know things he never meant to tell them anything about. In such cases again it is clear the conscious may slumber but the unconscious may be as active as ever. But the real complexity of the unconscious first emerged in connection with neuropathic cases and the science of the unconscious first took birth in neuropathology, to which we shall now proceed.

A. R. WADIA.

(To be continued)

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\* *Trilby*, by George du Maurier.

## SECONDARY EDUCATION: SOME SUGGESTIONS.\*

At a time when a thorough revision of the secondary educational system all over India in general is about to be taken up, and comprehensive committees are being appointed to go into the question, it may be some good to put down a few observations.

A word may be said at the outset on the importance of secondary education for the country at present. The crying need is for workers—workers capable of serving themselves, their neighbours, their municipalities, and their country. The university-educated community in India forms a microscopic minority. Partly on account of this smallness of numbers and partly on account of a considerable proportion being drawn away by the Government for its services, that community has utterly failed to meet the needs of the people at large in the shape of social service, political education and leadership, and economic amelioration. Passion for the country, adequate means, even preparedness to sacrifice—all of this there is in ample amount in the country, but what seems to be conspicuously absent is capacity to observe and appreciate conditions existing around and a realisation of one's duties under such conditions. The acquisition of such a capacity and the development of such a sense of self-examination and self-discipline by a sufficiently large number of people who are bred up and live among the masses, and who can understand the doubts, draw-backs, and difficulties of the *real* people, can be substantially helped only by a thorough practical scheme of secondary education. At present, the propertied classes have all facilities to work for the country's good, but that class cannot be expected to guide the destinies of a people safely. The less wealthy classes must put their shoulder to the wheel, and this task requires that a huge band of men and women shall come out of our secondary schools, equipped with an adequate education and training in the required branches of knowledge and work.

What are the present needs of the country, and what is the kind of knowledge and training necessary to be introduced in the secondary course of education? Each nation has its own premises to proceed upon, its own course to follow, its own aims to achieve, and its

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\* *Vide* Editorial on pp. 3—6.

own mission to fulfil. Social betterment in India requires vast and strenuous spade-work. A substantial humanitarian programme has to be pursued by proper-tempered and properly-equipped battalions. The economic future requires self-respecting hearts, enlightened minds, and industrious hands. The clerical pen has taken the life from the Indian's hand, which is now but an automaton. The political needs of the country are being deplorably neglected: a properly educated electorate bearing some appreciable proportion in numbers to the millions of India is the fundamental condition for the raising of the country's political status.

The present arrangement may briefly be reviewed. The secondary course, for example in Mysore, runs over a period of four years, with two public examinations, the S.S.L.C. examination at the end of the first three years, and the U.E. (University Entrance) examination at the end of the fourth year. The following two tables show the variety of subjects and their relative importance:—

### *S. S. L. C.*

#### *GROUP A.—Compulsory.*

- |  |                                |
|--|--------------------------------|
| 1. English.  |                                |
| 2. Second Language (Vernacular, classical or foreign).                                     | Public exami-                  |
| 3. Elementary Mathematics, including commercial Arithmetic.                                | nation.                        |
| 4. Elementary Science.   |                                |
| 5. History of India, Elementary Survey.  |                                |
| 6. Geography of the World, Elementary Survey with special reference to the British Empire. |                                |
| 7. Sloyd or Drawing.   |                                |
| 8. Athletics and Games.  |                                |
| 9. Music.  | } Lady candidates—first 6, any |
| 10. Needle-work and Dress-making.  | two out of 7, 9, 10, 11 and    |
| 11. Lace Work.   | 12, subject No. 8 being        |
| 12. Domestic Economy.  | excluded.                      |

#### *GROUP B.—Optional.*

- |  |   |
|--|---|
| 13. History of India and History of England.       | } |
| 14. Elementary Economics.                          |   |
| 15. Physics and Chemistry.                         |   |
| 16. Natural Science (Botany and Human Physiology). |   |

17. Algebra and Geometry.
18. Sanskrit or Persian.
19. Commerce.
20. Agriculture.

Any two of the  
options to be  
taken.

GROUP C—*Optional.*

21. Industries.
22. Pedagogics.
23. Trigonometry.
24. Hygiene.
25. Shorthand and Typewriting.
26. Précis-writing and Indexing.

UNIVERSITY ENTRANCE EXAMINATION.

*Courses of Study.*

- I. English—Composition, poetry, prose, non-detailed study.
- II. A Second language—Kannada, Telugu, Tamil, Sanskrit, Hindustani, Persian or French. When a student selects Sanskrit or Persian as one of his optional subjects, he shall be required to select for his second language a language other than Sanskrit or Persian.
- III. Any one of the following groups of subjects:—
  - (a) Physics, Chemistry, and Mathematics or Natural Science.
  - (b) History, Logic, and Sanskrit or Persian or Elementary Economics.

The appropriateness or otherwise of the present curricula has to be carefully examined in view of observations made earlier in the course of this article. It strikes the impartial observer that "English" is given too much importance. "Business" English is what seems to be a necessary equipment for the average citizen. "A sufficient knowledge of the English language to be able to take part in the proceedings of the Legislative Council" is the literary qualification expected of a Mysore Legislative Council member (Legislative Council Manual, p. 26). So the privileges of English literature must reasonably be reserved for the student who takes a special liking to it and takes it as an optional. As regards the aesthetic side of literature, the real cultivation should be in post-scholastic days, and the vernacular literature prescribed must serve the purposes of an adequate introduction.

The current "science mania" has rendered the curricula quite one-sided. The uses of a good course in elementary science to all students "in developing their knowledge of the surrounding physical world and in

developing their powers of observation cannot be exaggerated." "This," says the Calcutta University Commission Report, "is that which by vivid description opens the minds of children to the significance of life and its environment; which shows them by guidance and suggestion how to use their eyes; which trains them to observe accurately, to mark what is significant, to describe in words what they actually see, and to draw correctly such inferences as are within their powers." (Pp. 63-64, Vol. IV. Part II.)

But to create a distinction by viewing elementary science as a compulsory examination subject in contrast to other similar subjects, and to equip the science sections at the cost of other equally important sections is nothing short of unwisdom. Government preference and lucrative lines of earning persuade the guardian to put his boy to science, and the large amount of money spent by Government on the equipment of science tells upon the imagination of the average boy and leads him to science. If the present policy be pursued for some time more, one should not wonder at the virtual extinction of non-science subjects by sheer atrophy.

Of what utility is the costly post-elementary science instruction so fondly provided and encouraged by Government, and so admirably taken up and pursued by students? Whichever side one may turn, one sees only three classes of workers who make real use of their scientific knowledge beyond the elementary grade—teachers of science and research students in science and people taking to technical lines. "But," says Viscount Bryce (in whose recent passing away the world has incurred an irreparable loss), "such work requires an elaborate provision—and an amount of time which practically restricts it to those who make it the business of their life, and puts it out of reach of persons actually engaged in some other occupation." The rest have life to face before they think of their scientific knowledge. A number take up law, geology graduates become clerks, and chemistry men become revenue officers. Even the recommendations of the Calcutta University Commission are unfortunately rather partial in this respect. They ignore the value of social studies in equipping the social and political side of the average citizen when they lay stress only on the need for industrial betterment in the country. It looks as though they forgot for the moment the 1919 Reform Act. They observe:—

"A better secondary education would give to the workshops and factories of the future the responsible leaders which they will require. . . . A good modern course of secondary education should give an important place to the training of the hand and the study of science. . . ."

But Viscount Bryce, addressing in 1897 (when England and America were suffering from a like "science mania") an American audience at the University of Chicago, put the weakness of such a position in very graphic words. "While you are at work on the hydrocarbons in the college laboratory your curiosity and interest are roused by the remarkable phenomena they present. But they do not help you to order your life and conversation aright. Euclid's geometry is interesting as a model of exact deductive reasoning. One remembers it with pleasure. A man who has some leisure and some talent in this direction may all through his life enjoy the effort of solving mathematical problems. But has anyone at a supreme moment of some moral struggle ever been able to find help and stimulus in the thought that the square described on the hypotenuse of a right-angled triangle is equal to the squares described on the two other sides thereof? That which explains man himself has after all the deepest interest for us." Extreme as Bryce's observations may look to some, nobody can deny the merit they have in revealing the value of social studies as an equipment for work-a-day world men and women. Yet in the curriculum of studies shown above, Indian History and Geography are made non-public-examination subjects; and the consequent neglect of them in our schools is scandalous. W. C. Wordsworth, Officiating Director of Public Instruction in Bengal, said: "Without some kind of examination there would be no incentive to work; as matters are in Bengal, subjects not examined in are neglected by both teachers and students." Mr. Penoy Kumar Sen and Mr. Raj Mohan Sen are of the same opinion. The latter said: "Our students as they now are will not seriously study any subject in which they are not to be examined." It is true that Indian History clubbed along with English History is on the optional list. But no country ever made its own history optional in the secondary course of education for its youths.

The instinct for drawing must be arranged to be developed in the lower classes, and sloyd, in spite of its very useful effect in training "the intelligence of the hand," must be transferred to the group of industrial optionals. Athletics and games must be scored out of the curriculum and introduced into the playing-fields. Religious instruction must be excluded from the class room, while moral instruction as such must be substituted by other subjects social in character and thus having a good deal of moral influence.

The four year secondary course must be divided into two courses of two years each with two public examinations at the end of the two courses respectively. The earlier examination may be called

the Lower Secondary Examination, and the latter the Upper Secondary Examination. The former course must consist of a set of subjects compulsory for all students. The list of subjects may comprise—

(1) English (including grammar, paraphrase, composition and prose).

(2) Vernacular (the Vernacular of the particular State or Province must be made compulsory, inasmuch as the candidate has generally to spend his whole life in that particular part of the country).

(3) Elementary Mathematics.

(4) Elementary Science (including Physiology).

(5) Geography of the World (with special reference to the British Empire).

(6) Indian History (with special reference to the history of the Province or State concerned).

Part-passing must not be allowed in this examination, all the subjects must be equally well attended to with regard to equipment and efficiency, and the public examination must be in all the six subjects.

The Upper Secondary course must have four compulsory subjects and three optionals. More attention must be paid to principles and land-marks in compulsory subjects, and to specialisation in optional subjects. In the public examination each compulsory subject may have only one paper, and each optional may have two papers, the total number of papers thus coming up to ten (the present University Entrance and Intermediate examinations have eleven papers).

The list of subjects should consist of:—

GROUP A—*Compulsory.*

Leading to the proper discharge of duties of citizenship in life. { 1. English (composition only).  
2. Indian Economics.  
3. The English Constitution.  
4. The Indian Constitution.

and

GROUP B—*Optional.*

I.

Leading to science teaching or science research work or technical professions. { 5. Physics.  
6. Chemistry.  
7. Natural Science or Mathematics.



II.

- |   |      |              |                          |
|---|------|--------------|--------------------------|
| Developing the industrial artisan,<br>the agriculturist or the industrial<br>scientist. | {    | 5.           | Any one subject, from I. |
|   |      | {            | Cotton.                  |
|   |      |              | Carpentry.               |
|   |      |              | 6. } Any two of          |
|   | 7. } | Rattan-work. |                          |
|   |      |              | Agriculture.             |

III.

- |  |    |   |
|--|----|---|
| Developing the specialist in literature or philosophy. | 5. | English Language and Literature.          |
|  | 6. | Sanskrit or any other Classical Language. |
|  | 7. | Logic or any Vernacular.                  |

IV.

- |  |   |    |  |
|--|---|----|--|
| Developing the specialist in history, economics or politics. | { | 5. | History of England.                            |
|  | { | 6. | Economic History of India                      |
|  |   | 7. | Indian History or Economic History of England. |

V.

- |   |   |    |                              |
|---|---|----|------------------------------|
| Developing the business man, journalist or clerk. | { | 5. | Commerce.                    |
|   | { | 6. | Shorthand and Typewriting.   |
|   |   | 7. | Précis-writing and Indexing. |

For compulsory subject No. 3 (the English Constitution) a very desirable text book would be A. J. Waldgrave's "Lessons in Citizenship" (Moral Instruction Series, Thomas Nelson & Sons). A knowledge of the Indian Constitution, it may be contended, will not be of any use in Indian States. But it is to be remembered that the prime object of the course of instruction is not so much to impart accurate knowledge of constitutional details as to fit the student to shoulder his civic burdens when he enters life.

A few of the advantages that may be expected to accrue from the adoption of such a scheme may be touched upon. Every man and every woman who undergoes the course of secondary education will be able to follow newspapers and journals and thus understand the currents of thought and progress going on in the world around. At present the average "science" attitude towards contemporary knowledge is, "I don't care to know it." Secondly, this same course will enable every man and woman, whatever be the occupation pursued,

to exercise the vote wisely on account of possessing a knowledge of the duties and privileges attached to it. An enlightened and wise use of the vote is the foundation stone on which has to be built up a self-supporting Indian political edifice. Thirdly, a knowledge of Indian economic conditions will certainly act as an eye-opener to the youth of the country, and will very much serve to increase the number of true social workers. The nerveless imitation of the West which has been a very conspicuous defect among our educated men and women will soon be put a stop to ; the move has already begun. A clear appreciation of the growth of the English Constitution will drive well home the value of evolution in a country's political progress. Lastly, the secondary school man and woman will better fit society as units.

Thus, the plea put forward by this article is that subjects which help to nourish different faculties in boys and girls must be compulsory for all of them in the "Lower Secondary" course ; that specialization must begin only after such an examination ; that while the optional groupings might continue as they are now (with some modifications as suggested above), the compulsory group must consist of subjects which help to equip the future citizen in discharging his social, political, and economic responsibilities to his country. Not merely cultural, not merely intellectual, not merely material, but also the social requirements must be provided for in our secondary course of education.

S. KESAVA IYENGAR.

## EINSTEIN'S NOTIONS ABOUT TIME AND SPACE.\*

*Absolute and Relative* are two different views regarding our knowledge of things. According to the Socratic theory of innate ideas, the mind has a capacity to grasp absolute qualities apart from objects which possess them, e.g. we can readily say whether a particular object is white or hard ; but we cannot think of whiteness or hardness apart from an object which possesses these attributes. We can find whether a given body is in motion ; but we cannot conceive of motion apart from a moving body. Socrates however said that the human mind can comprehend these qualities apart from objects which possess them. According to this view, an observer can narrate knowledge based on these supposed absolute ideas which will therefore be the same to all. Eddington describes the absolute as that relative which is always the same, no matter what it is relative to. We may therefore say that the absolute is something inherent in nature or existence. We are sure that the quality which we attribute as absolute exists there. The Hindu view is that everything is relative to the stage of evolution. The doctrine of *maya* is based on this view. The relative is therefore something which depends upon idiosyncracies of observers, their capacity and point of view. Truth is absolute ; social morals are relative to the society of which we talk.

*Newton's views of space and time.*—The views of space and time held hitherto are due to Newton. According to him space is absolute ; we can always identify a point in space. This space is homogeneous, and isotropic. This leads to the idea of absolute motion and rest ; since a point in space can be identified (the difficulty of actually identifying was overlooked), we can say whether a body is at rest or in motion even though there is only one body present in infinite empty space.

Newton's idea is that time is absolute. "Absolute true and mathematical time is conceived by Newton as flowing at a constant rate, unaffected by the speed or slowness of material things. It is also called duration."

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\* Based on a lecture delivered before the Engineering College Association, Bangalore, and furnished by the writer that the layman may more easily follow his exposition of relativity.

Analyse our ordinary conception of time. It is based on the earth's rotation on its axis. When we say it is noon at a place, we mean that the meridian of the place is opposite the sun. When we say it is 2 P.M., we mean that the meridian makes an angle of  $30^\circ$  with that opposite the sun, *i.e.* the motion of the earth on its axis regulates our time. In fact Newton's first law—a body continues in a state of uniform motion in a straight line unless disturbed by external forces to change that state—gives the definition of equal intervals of time in the form,—“A body undisturbed by other bodies traverses equal paths in equal intervals of time.” For ordinary purposes the fundamental motion is that of the hands of the watch.

Let us proceed to examine our ideas regarding the watch. There is an inherent feeling that two clocks of identical construction and equivalent external influences (of heat, electric and magnetic influences, etc.) will always show the same time provided they are both started from the same position on the dial. Retain one on the earth; take one to the moon; have yet another on a flying aeroplane or a falling balloon. It makes no difference to the time indicated by the clocks provided the effects of the above external influences are the same. Thus we recognise the dependence of time as measured by the clock on temperature, etc., but not on motion; *i.e.* time is absolute in so far as it is independent of the motion of the clock by which it is measured.

*Discrepancies.*—Scientists expressed at various times discontent with these views, *e.g.* “The absolute motion generally admitted up to now is a pure chimera based on another chimera, that of an eternal and absolute space. We have also to combat a conception as chimerical as that of space *viz.* that which makes time an entity real, necessary and independent of all creation.”—DUHAMEL, 1870. Another important dissatisfaction with Newton is regarding his law of gravitation. A question was asked,—“What is the nature of gravitation? Our idea of force is derived from muscular sensations. Does Newton mean that dead matter exerts action as a living thing? How is this action that A exerts on B communicated to B?” To answer this and other similar questions was propounded the hypothesis of the aether according to which all space is pervaded by a stationary isotropic homogeneous substance (the aether) which permeates all material bodies as freely perhaps as the wind passes through a grove of trees. This aether was declared to be the seat of all forces, and to serve the purpose of a material medium to communicate the action of one body to another.

This explanation was followed by the problem of demonstrating the earth's motion round the Sun by finding the velocity of the earth in the

aether. Let me recall to your minds the familiar difficulty we often feel in determining whether a slowly moving train in which we sit is in motion or the adjacent one. To determine it, we wait for bumps (*i.e.* accelerations) or else look at the station buildings and plants which we know to be fixed (*i.e.* look at external objects which do not share our motion). This is due to the mechanical principle of relativity\* as a consequence of which it is impossible by purely mechanical experiment and observation to determine the uniform motion of one's system. Therefore, it was impossible by any mechanical experiments conducted on the earth to demonstrate its motion. Scientists therefore tried optical experiments.

Here there was a preliminary problem. In still air, sound travels with a velocity of 1,100 feet per second. If the wind blows towards you with a velocity of 100 feet per second the distance to you is covered at 1,200 feet per second. Allowing for the motion of the wind, you measure the velocity of sound as 1,100 in still air, *i.e.* relative to the medium transmitting the sound, the velocity is the same. Also if, instead of the wind blowing, you travel towards the source of sound with a velocity of 100 feet per second, then if you are unconscious of your motion or at any rate if you make no allowance for it, you find the distance covered at 1,200 feet per second. This is pure relative velocity. Now since light consists of waves in the aether as sound consists of waves in air, what is the solution of the corresponding problems for light waves? In other words, let a light flash be emitted at a point A in the atmosphere. Let there be an observer at B. Let there be first a wind from A to B. Secondly let there be no wind. Is there a difference in the velocity of light as determined in the two cases? Now the earth's atmosphere is in motion with the earth, and therefore in the aether, the medium in which light is propagated. This velocity of the earth has therefore some effect on the velocity of propagation of light, similar to your motion towards the source of sound. If we determine the real velocity of light, and the velocity as determined by the earth's motion (if it has effect), we could find the velocity of the earth and thus demonstrate its motion round the Sun. For this purpose was performed the famous experiment of Michelson and Morley\* which showed that there was no effect. Let me point out the practical consequences of this want of effect. Taking the second case of sound, it does not matter whether an observer is at rest or in motion; he finds in either case the same value for the velocity of light. This contradicts common sense. If you are on a fixed

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\* In this connection Sections 5 and 6 of my article on "The Theory of Relativity" in the Sept. 1921 issue of this magazine may be consulted.

road, and your friend in a moving train, you find that the velocity with which a crow flies as determined by you is different from that as determined by your friend. The case of light cannot be different. But experimental evidence makes it different. How is the contradiction to be solved? Here Einstein comes to the rescue with his new ideas of space and time. He attributes the contradiction to wrong conceptions of space and time supposed absolute by Newton and works out his special Theory of Relativity.

*Einstein's idea of space.*—Space as an entity endowed with definite physical properties does not exist. It is only a conception, not a perception. We see bodies everywhere; we infer a continuum called space in which they are situated. It is certainly not real in the sense that matter is real. What do we understand by a point in space? It is impossible to say what it means except when it can be made to coincide for observation with a point of a rigid body.

Measurement is an essential condition of all physical experiments. To explore the world, we require some kind of apparatus. Explored with a magnetic needle, we derive the magnetic field; explored with a rigid scale, we derive the science of geometry. Again the distance between two points is a quantity obtained by measurement which should always be made by an observer. Hence the distance between two points (of a rigid body) has to be given in reference to some observer who is to measure it. Length in fact is not anything inherent in nature or in things, but is an expression of a relation between the rod and the observer. When this relation changes, the length also as determined by the observer changes. Einstein finds that if a rod of length  $l$  when at rest relative to the observer is set in motion with velocity  $v$  in the direction of its length, the same observer finds that it has contracted to  $l\sqrt{1-\frac{v^2}{c^2}}$

*Einstein's idea of time.*—Time is of course to be measured by the motion of the hands of a clock. Let us have a number of clocks of identical construction at a place A set so that they show the same time. Let them be synchronous at A (*i.e.* go at the same rate). Remove one to B a place at rest relative to A. (A system S is defined to consist of all bodies at rest relative to one another). Can we say that the clock at B is synchronous with a clock at A? Einstein takes as a hypothesis that light has a definite and constant velocity, independent of the velocity of the source emitting the light or of the observer determining it. Hence he defines the clocks at A and B to be synchronous if

$$t_a' - t_b = t_b - t_a,$$

where  $t_a$  is the time at which a light flash is sent from A,  $t_b$  the time at which it is received at B, and  $t_a'$  is the time at which it is received

back at A, supposing the flash to be instantaneously sent back from B. To measure the times of events at various places of a system S, distribute to these places clocks synchronous with one another. Thus the times of various places of a system S are connected with one another so as to form one S-time. And events receiving the same time labels at the various places in S are said to be simultaneous. Any other system S' can similarly construct its own time.

A question immediately arises, are the times of the two systems the same? If not, what is the relation between them? Einstein has proved that the times are different; that the duration of one and the same event as recorded by observers in the two systems are different. Let S' be a system having with respect to S, a uniform velocity  $v$  in the direction of the  $x$ -axis, and let their axes of reference coincide to start with. Then if  $(x, y, z, t)$  are the co-ordinates and time of an event as observed in S, and similarly with  $(x', y', z', t')$ , then

$$x' = \gamma(x - vt), \quad y' = y, \quad z' = z, \quad t' = \gamma(t - \frac{v}{c^2}x)$$

$$\text{where } \gamma^2 (1 - \frac{v^2}{c^2}) = 1$$

Notice also that for given  $x, y, z$  (at a place P of S), there is a definite value of  $t'$  for every value of  $t$ . If  $t$  is the same for any number of events in P,  $t'$  is the same in S', i.e. events locally simultaneous in S are simultaneous in S'. But as  $x$  varies,  $t'$  does not retain the same value with  $t$ , i.e. if a number of events at various places of the  $x$ -axis in S are simultaneous (i.e. have the same  $t$ -labels), they will not receive the same  $t'$ -labels, i.e. they will not be simultaneous in S'. Thus according to Einstein, time is absolute to the extent that each system has its own peculiar time and relative to the extent that the times of different systems vary from one another. Not only do the thermal, electric, and magnetic influences affect a clock's rate, but also its motion; so that it becomes now meaningless to describe the time of an event without mentioning the system from which it is measured. The last of the above equations further shows that space and time are not entirely independent of one another as Newton supposed. Changing from one system to another produces the same effect on the mutual relations between time and space as a change of axes in space. A bit of time goes into space, and a bit of space into time just as a bit of  $x$  becomes  $y$  and a bit of  $y, x$ . Thus Minkowski writes, "The views of time and space that I have to set forth have their foundation in experimental physics. Therein is their strength. Their tendency is revolutionary. Hereafter time in itself and space in itself sink to mere shadows and only an amorphous combination of the two preserves an independent existence."

C. KRISHNAMACHAR.

## THE PROBLEM OF THE WOMAN'S PART ON THE MODERN INDIAN STAGE.

TILL a few years ago, the Indian theatre was in a state of crude and elemental simplicity. The impersonation of lady characters by boy actors was one of the traditions which dominated it. neither the pundit dramatist nor the enterprising stage proprietor giving any consideration to the subject. A kind of stagnation in art principle and stagecraft was noticeable throughout. But to-day there is growing a desire in the minds of the educated public to incorporate into our drama the ideals of art and technique acquired by our intellectual contact with the rest of the world. The theatre-going public have begun to clamour for changes, prominent among which is the introduction of real actresses on the stage.

The change sought for is not so simple as it appears at the outset, and the chances of a satisfactory solution are dependant entirely on the answer which the country will pronounce on the question of social reform.

An attempt must be made to investigate the artistic reasons for the discontinuance of the age-long practice of boys acting the heroine parts, a practice which was highly commendable for moral reasons among others.

Boys have exhibited such perfection in the illusion of stage "make-up" as to lure the most exacting eye into accepting the presentation as a fit representation of the female character. This is due to the fact that the very essence of dramatic art consists in the creation of illusions; and in the supplementation of any defect by a generous stretch of the imagination. The show is largely made up of conventions uncomplainingly accepted by the mind. The confines of a few painted curtains are accepted at one moment for Ujjain and at another for Kanouj, even though the only visible stage alteration has been the mere lifting of a curtain. A couple of painted wooden boards swung up and down in the dim recesses of the stage, pass off for a sea and suggest the perilous prospects of a midnight voyage. The mere leaping over these boards exalts this elementary hurdle feat into one of crossing over the sea in the face of tremendous odds. A mind which



tolerates rattling curtains, unnatural flowers, painted trees, need not complain at all against a presentation which, for all purposes, has the semblance of a woman. While the external details of the feminine make up is there, why should the mind disturb itself to consider that the presentation is largely the work of a set of green-room assistants?

The boy who is selected to play the part of a heroine is, in many cases, an orphan or a foundling or one who is compelled by circumstances to sell his talents for a pittance. (This observation applies generally to theatres scattered about the country, and not to the best theatres in large towns.) The young actor is encouraged to cultivate an early acquaintance with questionable members of the other sex, and an increase in income is promised in proportion to the readiness with which he assimilates the feminine arts and blandishments. Sometimes the learners attain marvellous proficiency. An instance is known of an actor who accepted a challenge and entered into a gathering of ladies in the daytime and took part in all their pastimes without disclosing his identity. Though this perfection is a matter of wonder, it is certainly no matter for gratification. For as soon as we think of the after-life of these men, when they can no longer play such parts, and of the poverty and social scorn that frequently fall to their lot, we begin to realise that our tolerance of their occupation as heroines is a matter for severe censure.

The custom of entertaining boys for heroine acting is to be discouraged not only because of the social degradation which meets them but because of the exalted view we now have of the theatre and its place in national life. The stage is to represent the synthesis of all the fine arts, and symbolise and express the cultural greatness of the age. It is no longer the instrument of the commercialist, nor is it merely a rendezvous of the pleasure-seeking mob. People now hold the theatre in such an esteem that actors qualify themselves for its work as for a profession. The boy referred to in the previous paragraph surely can find no place in our enlightened theatres.

A further cause for the proposed change is found in the discrepancies that we observe on the stage. The impersonation of elderly lady characters is invariably unsatisfactory. The actor representing an old dame feels satisfied with covering his head with dishevelled white hair, with shivering on the stage on the support of a rotten stick, and with murmuring a jargon of broken words to an impatient audience; while in reality old women put on excellent dress, are quite capable of walking upright, and frequently excel the young in pleasantness of conversation. One too often meets goody-goody heroines, and

must be excused for being tired of them, and for longing for the sight of an intelligent commonsense mother, plying her subtle oars in the dangerous waters of the family, or of some other elderly personage doing her humble "bit" for the world at the much despised age of forty or fifty.

Even in the impersonation of younger characters, the obstacles are not few. The voice is to be feigned, and when it is to be maintained at a particular pitch considerable difficulty is experienced. A clear, soft, ringing voice is rarely found in the ordinary theatre. The charm of Cordelia's speech consists in a fine modulation of the voice, which is pronounced to be "soft, gentle and low, an excellent thing in woman." How can a man command it? The grace of Ophelia's acting consists in a subtlety of movement hardly within the reach of a masculine frame. Few indeed are the theatres which could present these characters. When the task is to present a keen mental conflict, as in the case of Mohini or Kayadu, there are expressions to be conveyed in the quick flashes of the eye, the tremble in the hand, the poise of the head, and the sudden melting into prayer, far out of the reach even of the masculine imagination, while coming easily and naturally to the woman actor. The mechanical swing of the arm in the act of wiping the eyes—that commonest of the conventional postures of the male impersonator of woman—is only a mockery of grief. And when the "actor" marches to the very front of the footlights, slits the air with a vigorous swing of the arm, and commences a proud heaving of the breast in accompaniment to a popular song, it is time for any decent spectator to quit the theatre. An actress would never do so.

And again, in grouping ridiculous situations invariably arise. Actors of similar age and height are presented as mother and daughter. Chandramati rends the air with her wailing for her dead son whose corpse is stretched in front of her; but they look much more like brother and sister. It is not an uncommon sight for a Kousalya to appear from one wing of the stage with her maidenly blushes, leaning on the shoulder of her royal husband, whose chin cannot yet brook the burden of a beard. From the other wing will step forth Sri Rama, the heir-apparent to the holy throne of Ayodhya, accompanied by a blinking brother, probably shivering as a result of stage-fright. A regular visitor may identify the personages as the hero and heroine of some other drama. The mother will look ridiculously young. Another most extraordinary situation may arise, if the usual Kousalya happens to be absent. One of the striplings in the green-room, irrespective of the fact that he has acted the playmate of Lakshmana in an early

scene, is asked to get up without ado, and wear the heavy clothing set apart for the character and plunge into the acting on the merits of his slender memory. Instances of this sort of discrepancy are too common to need any elaboration. Here is an example of the kind of absurdity that constantly arises. Kalidasa, the renowned dunce-peasant of ancient Indian folk-lore, is married to a princess. On a particular day he is taking elementary lessons from his repentant and reconciled wife. At one performance the pin which fastened her garment to the crown of her head, happened to give way during the lesson. The rich sarri slid down from the head. No notice was taken of the fact till one of the prompters called "her" by name to draw attention to the occurrence. "She" turned round to catch the whisper when lo! she revealed to the full view of the audience the back of a clean cropped head. Comment is needless.

Two more factors argue for the discontinuance of the present practice. The hero on the stage generally finds his environment dull and uninspiring. He feels a need for lashing himself into the proper mood for acting, in order to forget his sordid surroundings. Wandering in a garden of paper flowers and canvas trees, he has to make sure he is a prince. When he has scarcely become inured to his environment, he is apprised of the arrival of the heroine, who measures a slow and musical gait and forces out a few sly expressions supposed to be indications of her coyness. In a short time her gait becomes ungainly and her posing most mechanical. The masculine identity slowly discloses itself under the burden of the weighty garments and the unnatural efforts of the acting. The hero, who has all along been seeking an appropriate response from the heroine, is appalled by this unnatural feminine apparition, and stands divided in his mind as to whether he should continue his acting or tell her of her unnaturalness. Quick and appropriate responses from the heroine help in the creation of atmosphere. The boy heroine is invariably too dull to create or to sustain it.

The highest instinct for acting is demanded of the heroine not while she is busy speaking or singing but while she has to remain quiet and let other characters act. During these intervals an artificial stiffness comes over the body. The handkerchief is awkwardly brought into service, to wipe off perspiration, to dust the garment, to hide the smiles that sneak in so often at wrong moments. The hem of the richly embroidered sarri is also enlisted for a similar purpose. She can be discovered swinging the head or dancing the toe in accompaniment to the music. These are gestures which betray the actor's weaknesses. It is a common

sight to see the amateur heroine actor sit idle while a child near by is entertaining the company with a song. The right sort of actor, led by proper instincts, would take up the little hands of the child and show it how to keep time with the palms.

Since atmosphere on the stage and instinct for acting are two primary conditions for the success of a play, it naturally follows that ladies alone should take up women's parts. There is one more point to urge this conclusion. Woman is a born interpreter. Her forte is to observe and to interpret her observations. When people talk of giving her the "privilege" to appear on the stage, she may rightly protest and exclaim—"Who are you to admit or to reject?"

Indian society is so constituted that in spite of all arguments, artistic or æsthetic, which urge the taking of women's parts by real women, the step cannot easily be taken. In certain classes of society the ghosha veil is thrown across the woman's face, and it clings there in spite of our contact with the liberalising views of Western culture. Among the Hindus circumstances are not more encouraging, even though restrictions are not so many. The Hindu lady is primarily conservative, and she considers it a proud privilege of life to yield entirely to the will of her husband. There is no doubt something tender and graceful in this voluntary submission, but it must, all the same, be conceded that her position very often leads to a kind of unhealthy servility. The position of total subordination and the custom of social exclusion have so strongly worked on her mind that she dare not look a man in the face, or address a few words to him without being conscious of her sex and her inferiority.

The reason for the existence of strict social legislation in India is the association of certain ideals of conduct with certain virtues of life. But the day is not far off when there will be a general clamour for a reconsideration of these ideals. The West has found that when men and women mix without restraint the chances of corruption are at a minimum. In a mixed gathering the parties do not think of the sex identity at all. Another experience of the West is that feminine virtues thrive quite as well even beyond the limits of the home.

The granting of freedom to women would mean the dispensing with certain Hindu ideals. The question plainly works itself to whether we should bear this loss or close the theatres once for all. Since the theatre has come to hold a very respectable place, some of the social legislations may be permitted to slacken in course of time, and a hope may be ventured that the Indian society may permit the aspirant woman scope for histrionic service, without feeling a sense of loss.

Yet the question may be asked—is it advisable for ladies to join the average *existing* theatre? There is only one answer to it, and that is an emphatic Nay. The first attempt at coming out of the age-long seclusion may be made by arranging for theatricals in family gatherings. In India even this is considered to be a bold step. The next step might probably be the fostering of amateur theatricals by societies in which membership is restricted to the cultured few. Even this pioneer service to the theatre may be met with contempt, but courage born of conviction may win the day.

In brief, women's parts should only be taken by women. Cultured actresses participating in the work of a higher type of theatre—this is the ideal of the day. But India may take a long time indeed before she can reach this ideal.

H. V. BHASHYAM IYENGAR.

## INDIAN ART (II).

**SCULPTURE.**—Let us enter another room in the fairy palace of art. Sculpture is the dexterous use of the chisel on stone or metal. It has thus a material basis. Movement is denied to sculpture and the artist is beset with the difficulty of presenting physical beauty in repose. He has to endow the figures with the appearance of life. As in architecture, so in sculpture nothing definite can be said about the artistic production of India before Asoka's days. (Agasthya, in 800 B.C., is said to have systematized the art of making bronze images. Since then an informal codification of the sculptural canons has gone on.) Asoka, with his strong Buddhistic tendencies, lent a helping hand to sculpture. Nearly all the early art of India is essentially Buddhistic in character, and so with its sculpture stimulated by the catholic tenets of Sakya Muni. The Buddhistic sculpture of Asoka's days depicts merry and pleasant scenes from life. The earliest extant monuments of that time consist very largely of inscriptions, pillars with animal figures at the top, and isolated statues. They are all beautifully executed. The animals carved at this age combine, as nowhere else in the world, an ideal dignity with perfect accuracy of detail. A Sanchi statue, two colossal female figures and the lion pillar at Sarnath must be ascribed to the reign of Asoka.

The aesthetic revival of Asoka's days continued even after its originator the Priyadassin was dead. To the Post-Asokan period belong the striking carvings on the gateway of the stupa at Barhut. The soul-stirring sculptures on the outer railings of the Sanchi stupa also belong to this period. There are a number of other pieces of sculpture at Mathura (as, for example, the visit of Indra to Buddha, the wonderful reliefs on the *Torna* beam, and a female statue), and a number at Amaravathi (for example, the man and the boy), which unmistakably belong to the period in question. They exhibit distinct traces of foreign influence. This has been explained by the fact that Asoka allowed a number of foreign artists to migrate into his empire and work there.

The period we are about to enter upon is one of great artistic fecundity, chiefly Indo-Hellenic in character. It begins with the rise of Gandhara (the present N. W. Provinces) under the famous Kushan kings. Kadphises II was succeeded by his illustrious son, Kanishka,

known far and wide for his inauguration of the Mahayana or Great Vehicle form of Buddhism, the essence of which lies in the deification of Buddha. Consequently the great artistic impulse of the time is characterized by the increasing number of Buddha's images carved to enhance the popularity of Buddha and his teachings. The abundance of various kinds of images of the Great Master throws much light on the early practices of the followers of the Great Vehicle. In the decorative details of many a sculpture belonging to this period traces of Corinthian influence are clearly noticeable.

Leaving out of consideration some detached heads of Bodhisattvas, we are left with single or small groups of statues and relief pictures, illustrating the sacred stories in successive scenes. These deal with a variety of subjects too numerous to classify and describe here. They are particularly precious as they contain descriptions of every phase of life in those times.

The earliest available to us is the figure of Bhudda with moustaches and attended by a thunderbolt bearer. The seated Bhuddha image exhibited in the Berlin Museum is one of the first examples of the early Buddha Type. We have the picture of Indra's visit to Bhuddha, the impressive image of the emaciated "*Gautama*" doing penance. A number of other sculptures depict every incident in Buddha's life with characteristic vigour and according to the strictest canons of the Silpa Sastra. The carvings of the colossal figures of Kuvvara and his wife are admirable. A host of others follow, notably the woman and the tree, the woman holding a mirror, the man playing on the lyre, boys armed as soldiers, an old man, the nativity of Buddha, procession of maskers and soldiers, and a frieze of marine deities, each of which has its own distinctive emotional value, which it is impossible to discuss here. But one thing may be inferred from the names of the sculptures just enumerated,—that the artists of this period have departed from the immemorial habit of carving only religious figures and taken to depicting human life in all its fulness and variety. But this humanizing impulse was short-lived. We may note here that the Gandharan art was confined to the N. W. Frontiers of India, not being carried far into the interior. It is the work chiefly of the foreign artists invited by Kanishka and Huvishka, his son. Their traditions had very little influence on the habit of the Indian artists in the interior. Gandharan art stands apart. With the fall of the Kushan dynasty, the Gandharan art, deprived of the royal patronage, lingered only to be thoroughly Indianized by the artists of a later day, as is pointed out by Dr. Coomaraswamy and Mr. Havell. Gradual Indianization is a characteristic sign of the Indian institutions

which either in social matters or in the domain of art are equally original and changeable with the march of time, so that they have in the long run always held their own, even against the overwhelming currents of foreign influence. This flexibility and adaptability have through long centuries lubricated the Indian institutions and enabled them to adjust themselves easily to changed circumstances. The true Indian sculpture, divorced of all traces of foreign influence begins only after the Hellenistic school of Gandharan art begins to wane. The best Gandharan sculpture can never be placed beside the magnificent carvings in the grim recesses of the Ellora or Elephanta caves. But if the Gandharan school did not modify the Indian faculty for artistic creation, except for some curious little survivals in the details of decoration, it considerably affected the art of China, Japan, Korea and other far East countries. There are only three leading localities in the interior of India—Mathura, Sarnath and Amaravathi—where the influence of Gandharan practice is manifest in many of the artistic productions belonging definitely to this period. To attempt to describe the nature of the influence, and its effects, would involve an amount of detail out of keeping with the character of this essay.

We come now to the next great period of revival of Hindu art, that under the Gupta kings. Every one knows of the pitch of excellence to which the various arts and sciences attained under the munificent patronage of Vikramaditya. The earliest of the Gupta sculptures are those of a river goddess, at Udiapuri; of Siva as an ascetic; of Vishnu as Anantha; of Krishna and his mother. Sarnath and Mathura are rich in sculptures of the Gupta period, sculptures of such delicacy of design as a fifteenth century Italian sculptor might well envy. Later Gupta sculptures are numerous. The seated Sarnath Buddha, the standing Buddha at Mathura, and the colossal copper statue of Buddha at Surajgunj are the most impressive ones. Mr. Marshall considers Gupta art as being endowed with freshness and vitality. The series may be closed with a finely wrought figure of Bodhisattva Manjari from Sarnath, which marks the transition from Gupta to Mediæval art. But Southern and Western India were not barren all this while. The sculptures depicting the Temptation of Buddha (which Dr. Burgess calls 'beautiful') and the chase of the wild bull, spiritedly represented in the Ajanta cave, are in no way inferior to the best produced in Northern India at the same time.

Later the Buddhistic sculptures, so full of vigour and delight, yield place to the presentation by the artist of the passionless yogi, the ideal ascetic, described in *Bhagavat Gita*. Another important feature



of the Mediæval art is the endeavour to express superhuman emotions and strong demonic passions, as represented by the whirlwind dances of Nataraj, and the struggle of Marichi with Ravana. The masterly rendering of the energy of passion, the knowledge of light and shade, the extraordinary skill in presenting perfect repose, and a delicacy and expressiveness hardly capable of imitation characterize the Mediæval sculpture so peculiarly Indian in sentiment and expression.

Early examples of Mediæval sculpture are abundant enough, though much must have been swept out of existence during the stormy period of the Mohammadan conquest. A figure of Avalokiteswara found near Gaya, the three-headed six-armed tantric Marichi, the Rajamaharaj Sun God, the Rajagarh Buddha, all of them exquisitely executed, stand out among a host of minor pieces. At Bhuvaneswar in Orissa we find a beautiful example of the expression of the deepest of human emotions,—the mother's love for her child. Two exquisite female figures are found on the panel of the tower. At Konarak are the two colossal horses, and the huge elephant. A beautiful effigy of Balakrishna is one of the gems of Orissan art.

A glance at the gorgeously decorated walls of Mokalsi's temple at Chitor, the tower of victory in the same place, the marvellously expressive face on the wall of Vasanthagarh temple, is enough to convince us of the sculptural dexterity of the mediæval Rajput artists. The caves of Ellora and Elephanta are also full of beautiful carvings, among which the figures of Bhairava, the marriage of Siva and Parvati, Siva as an ascetic, are of conspicuous merit. The Durga and Mahishasura at Mahabalipuram are equally fine. Among the best that Southern India has contributed to the store of India's sculptural abundance, may be cited Siva's Dance and Siva and Parvathi (the Gangai-konda Cholaipuram temple), Siva supplicating (Tirumala Naik's choultry in Madura), the woman and the baby (the Great Madura temple), Asura and the monkeys, and lastly the female carrying the male deity (Rameswaram). The Chola kings and the Pallavas gave great encouragement to art and they are responsible for the rich artistic relics at Conjeevaram and Mahabalipuram.

An account of the achievements of the Indians in the field of sculpture cannot be complete unless we describe some of the images by Indian artists in Java, which, with other countries, like Borneo, Sumatra, Siam, Cambodia and Pegu was frequently visited by the adventurous Indian seamen of old. One of the very earliest of the extant sculptures is from Java. The Borobudur monument, combining the structures of both a temple and a stupa, is the best known of Indian works of art in

**Java.** The offerings to a Bodhisattva, Saraswati enthroned, a seated Buddha and the numerous bas-reliefs described by Mr. Havell, in his monumental work, "The History of Indian and Eastern Architecture," are the works of no mean hands but of trained artists.

It is only right to mention in passing the colossal figures of Jina at Karkala in South Kanara, and Sravanabelagola in the Mysore State. These are the two great colossi of Asia, visible for miles around. These giants by their very size command great awe and reverence from all beholders. Another colossal figure near Gwalior and the beautifully decorated Jain Basthis near Sravanabelagola (mentioned by Mr. Lewis Rice) are monumental works that will stand the test of centuries more.

Ever since the Mohammadan invasions attempts have been made by successive generations to raise sculpture to the pitch to which it had attained before. The Maratthas, the Vijayanagar Kings (as the Hampi ruins testify), the Nayakas at Madura, have in turn tried and failed to achieve this. The failure only shows that no amount of official patronage is likely ever to be of any use when religious enthusiasm is freezing in the veins of the nation. In India only periods of great religious revival have witnessed great advancement in art. To-day there are only a few houses of hereditary sculptors in Swamimalai, three miles from Kumbakonum. But let us keep in mind the fact that if the present is so unproductive the past is full of glorious achievements, and the future may yet transcend the past.

**PAINTING.**—Painting is the skilful presentation on canvas, by means of colours and lines applied and drawn according to the rules of perspective, of an object in its mental aspect. The painter has to depict solid objects on a flat surface and therefore has to use more of artifice in bringing home his idea to the minds of the spectators. He has to use colour in varying shades of brightness to represent the colours of the natural objects as faithfully as possible. He has to transfer ideas of distance and nearness to the flat canvas. It is clear from the disabilities which he has to overcome that his art requires in a peculiar degree qualities not needed in other arts. Painting is the sublimest of all the eye-arts inasmuch as it contains in a small compass ideas which through other media cannot be expressed so forcibly or can be expressed only with much vagueness. In his small space the painter is able to convey ideas of the boundless world of stars, and the impenetrable depths of human emotions.

Few realise that the art of painting has thrived on the Indian soil for a period exceeding two thousand years. Before it had so much as dawned on the mental horizon of Europe, the art had progressed so far

in India that it took Europe fifteen centuries to come up to India's level. The oldest paintings of the most primitive type are found in the Jogimara Cave, among the Ramagarh hills in the Central Provinces. But they are too antiquated in style to deserve any attention. The celebrated frescoes of the Ajanta Caves date from 100 B.C. to 600 A.D. and "comprise the most important mass of ancient paintings extant in the world." Mr. Fergusson brought these frescoes to light, and before that time they lay hidden in the caves of Ajanta. Partly owing to the neglected condition in which the paintings rotted through the centuries after they had been executed, partly owing to the irresponsible scribblers who defaced them and the smoke of many a culinary fire kindled there, the work of many a forgotten artist of old has been completely lost to us. Government has done something in the way of restoring the decaying treasures of Indian art, but unless the people of our country cultivate the faculty of artistic appreciation, anything done by other agencies to restore or renew our dying arts will be futile.

It is worth noticing that many of the Ajanta paintings bear close resemblances to the sculptures at Sanchi, and the bulk of them should be assigned to the Chalukyan times. The subject matter of these pictures is once again Buddha, his teachings, and the various myths and legends connected with Buddhism, though secular touches here and there meet the gaze. The decorative details consist of exquisite drawings of animals and trees and every imaginable kind of flower, fruit and herbage. Among Mr. Griffith's copies of these designs are a picture of an elephant, drawn true to reality, a bull of ferocious temper, and a snake drawn to serve as a background, for a bunch of beautiful flowers. Bull fights are a common sight, and they are extraordinarily well-drawn. Sketches of elephants and other animals occasionally grace the paintings. The picture of a Raja with a number of females is one of great merit. Figures of Buddha are by no means rare. A certain picture depicting a dying princess may be cited as an instance of the artist's insight into the human heart and his success in depicting deep emotions on the wall. Take again the mother and the child and the offerings to Buddha the deep human feeling of the one, the passionate devotion of the other. After seeing these paintings, one can never concur with Sir George Watt in his saying that the Ajanta Paintings can hardly be classed among the fine arts. These pictures are incomparably superior to any Egyptian or Chinese paintings. Moreover, executed as they are on so enormous a scale, the wall pictures of Ajanta are meant to be looked at from a distance and not to be subjected to scrutiny of any kind. Mr. Griffith,

in speaking about the Ajanta Paintings, says: "Here we have art with life in it, human faces full of expression, limbs drawn with grace and action, flowers which bloom, birds which soar, and beasts that spring or fight or patiently carry burdens; all are taken from Nature's book—growing after her pattern." Mr. Fergusson thinks that they are far superior to any painting in Europe before the time of Orcagna (14th century). Mr. Havell declares that they are suffused with the "same intense love of nature and spiritual devotion as are evident in the sculptures of Java." The paintings are of many styles and drawn at various periods. The most notable of them all are those in cave No. XVII. These are the lion hunt, the black buck, the elephant hunt, an elephant salaaming the king. They are the work of a hand different from all the rest, and are composed in a light and shade scheme unparalleled in Italy before the 17th century.

In the caves of Bagh in the Gwalior State are a number of wall paintings, which, like the Ajanta frescoes, have suffered great effacement. They may have been executed between the 6th and the 7th centuries A.D. The pictures rival those at Ajanta in variety of design, vigour of execution and wealth of decoration. In both places life is treated with equal gaiety and hardly ever a trace of asceticism.

Between the Ajanta wall-paintings and the Indo-Persian drawings of the time of Akbar lies a wide gap. No pictures belonging to this period are available to us, with the sole exception of some in the Bikanir Palace. In the 18th century paintings we find that the character of the old Indian art has suffered a change, from the lively scenes painted on the walls of the Ajanta caves to the mythological scenes becoming popular everywhere. This is symbolical of the change from the primitive simplicity of Indian culture to the rigid hardening of it during the 15th, 16th and 17th centuries, which may be described as the Dark Age of Indian History.

But to this trying period of Indian History belong the exquisite Ragamalas or the "Garland of Musical Modes." The Ragamalas are characterized by a singular tenderness of sentiment, and present examples of the best pictorial art ever produced in India. Each mode or Raga is conceived as a god, presiding over a particular season. Each Raga is attended by five Raginis or "Nymphs of Harmony," each of whom has eight sons. Each Raga with his family is appropriated to a season, during which alone his melody can be sung, at the prescribed hours of the day and the night. Here the Hindu mind has connected painting with music. It may be inconceivable to minds constituted like Mr. William Archer's, but not on that account absurd.

Mohan Sing's Dhanasari Ragini is a good example of the Ragamala paintings.

We cannot linger here to explain clearly the beautiful relation of music to musical modes in painting, how each Raga like Bhairavi, Sri Raga or Dipaka, can be conceived as a concrete image and depicted on the canvas like other objects in nature. Each Raga is symbolical of a particular emotion, and such an emotion is crystallized by the artist into an enigmatic picture. Thus can the Indian eye, trained to notice the harmony of inner relations, perceive the essential connection between all the arts, which are but the various expressions of the same essence, based on the same fundamental laws.

This epoch of Indian painting is full of pictures in which the Persian influence is very great. The painting called "The Bride" is a sufficient embodiment of it. Though delicately beautiful and charmingly imaginative, such paintings are alien to the Indian soil. The picture of "Uma worshipping Siva" is very suggestive. It is a night scene. The pallid globe of the moon is seen half hidden by a silver-tipped cloud, casting on the scene "a dim religious light." The cloud is the symbol of ignorance and worldliness. But the moon of Uma's mind is too strong for such frail clouds to effectually block the light. The dusky woods are ranged deeply behind, and the hill rises in silent glory on the right. The majestic hill is the ever-identical, all-towering presence of God, and is on the further border of the dark woods, which represent the life in this world, full of dread and entanglements. Thus is the scene worked up to represent the religious atmosphere of Uma's mind.

The manuscript of Tulsi Dasa's "Ramayana," marvellously illustrated in gold and silver, (now in possession of His Highness the Maharaja of Benares) contains several beautiful paintings, depicting incidents in the *Ramayana*.

In southern India too are a number of paintings, preserved at Thirumalai, Conjeevaram, Anegondi and Travancore. In the Mysore court are preserved some of the masterpieces of Ravi Varma.

Ravi Varma's paintings are said to be a feast of colours, devoid of the stir and colour of life. They are merely oil paintings produced on a commercial scale and for commercial purposes, showing mythological incidents and characters in the insipid manner characteristic of the 19th century. Ravi Varma's productions commanded a large sale, and there is not a house in Southern India where you do not find a picture or two of that lavish dealer in colours. He executed his work in a spirit thoroughly un-Indian, nor are his paintings true to life.

To-day a fair dawn of hope fills the artistic horizon with the glory of a great prospect for painting in India. It is to the Bengali Nationalistic School of painting that we must now turn our attention. Mr. Abanindranath Tagore, brother of our great poet, is the leading spirit of the movement. In recent times the oil-paintings of Europe had been too slavishly imitated by ungifted painters like Ravi Varma, and European conventions showed a tendency to become dangerously predominant. Mr. Abanindranath Tagore himself had practised oil-painting in his early years, but so soon as he saw the danger that was brewing for Indian art he gave it up and took to the sketching of beautiful, tiny pictures after the old Indian vogue, feeling that the advance of Indian art can only be along lines laid down in the past. Mr. Havell deserves great credit for popularising this movement. In fact Mr. Tagore reached his "Golden Threshold" with the assistance and kindly encouragement of Mr. Havell. This personal conviction of Mr. Tagore, and his habit of drawing inspiration from the past and subject matter from the present, have wrought nothing less than a revolution in the method of many an artist to-day. During the eighteen years since this fruitful idea took root in the Indian soil it has received great attention and support from all quarters. A regular school has grown up, with its own canons and methods definitely evolved. Mr. Havel is of opinion that Mr. Tagore's paintings are of the highest order, perfect in themselves, and deserving of support because of the noble ideal of revival of Indian art that he has before him. A good commencement has undoubtedly been made, but it is only a commencement. The movement needs to maintain the same vitality and vigour for a considerable length of time to attain perfection and popularity.

The paintings are lyrical and abound in human interest. Mr. Tagore's recent pieces "The Exiled Yaksha" and "Expectancy" are charmingly beautiful and highly expressive. Among the most gifted of his co-artists are Messrs. Nanda Lal Bose and Gaganendranath Tagore, the youngest of the Tagore family, whose productions are full of promise. The noble efforts of these artists to express the deeper currents of Indian life and feeling are worthy of the support that has been given to them. In conclusion, be it said to the credit of Mysore that she too has brought forth an equally good artist in Mr. Venkappa, whose picture of the "Earth Goddess offering sandals to Rama" must be reckoned among the best paintings of to-day. In Bombay too, artists are trying their hands at mural paintings.

*(To be continued.)*

N. MADHAVA RAO.

## UNIVERSITIES AND SCIENTIFIC RESEARCH.

THE broad and true sense in which the term "university" is to be used is "the sense that, while not confounding it with a college, however large or however ancient, nor applying it mistakenly to a college and a surrounding group of technical and professional faculties or schools, yet extends the term to include any institution where students, adequately trained by previous study of the liberal arts and sciences, are led into special fields of learning and research by teachers of high excellence and originality; and where by the agency of libraries, museums, laboratories and publications, knowledge is conserved, advanced and disseminated." —(Butler in his "The Meaning of Education.")

In an article on the above subject in Vol. IV, No. 10 of this Magazine Mr. R. K. Sangameswara Iyer pointed out that for scientific research of a high order to be possible, scholars should have both ability and opportunity. To find out and encourage the highest ability, there should be research professors of the highest type, men of enthusiasm, personality and character able to inspire zeal and devotion in their students. The existence of such professors, in the opinion of the writer, will serve to give the necessary opportunity for men of ability. It is my object in this short paper to express some opinions on the subject.

I certainly admit that there are great advantages to be derived from having first-rate research professors for the various departments of science. True, the inspiration of a master-mind can do more to kindle the scientific spirit in students than long hours of study within the four walls. Yet I do firmly believe in self-determination. Individual ability and enthusiasm can certainly advance scientific research even in the absence of the personal influence of the greatest minds. Advanced students in India with the highest training that our Universities can at present give cannot calmly sit complaining of the want of the guidance of master-minds to enable them to do research. The real cause to which is to be attributed the failure of our professors in the field of research is of a different nature. The malady has a different origin. To say that in India people are not of a sufficiently high capacity to be able to make important research in the sciences is something which I am not prepared to accept. The fact that we have produced within the last fifty years men who are among the accredited leaders of science is

testimony to what we are capable of amidst congenial surroundings. We shall here examine what opportunities we have for work in this direction.

What do we understand by opportunity? A student with an inclination for study of a particular type is said to have adequate opportunity if he receives encouragement to proceed in that line and has the facilities necessary to enable him to do so. Amongst the most important of these is a good library where all can get the most modern journals and books to acquaint themselves with the most recent advances in their respective subjects. *Knowledge is most interesting near the edges of its expanding border where only it is closely connected with life*; and it is there alone that real research is possible. A scientist unaware of recent experiments in his line, and therefore isolated from the rest of the scientific world, cannot boldly claim any result as his own, because his results may have been discovered already by scientists of whom he has not heard. To give an instance, Mr. S. Ramanujan is now acknowledged to have been one of the greatest mathematical thinkers in the world, and his originality was of a type hitherto unknown to European mathematicians. This is the opinion of Mr. Hardy, published some time back in the "Journal of the Indian Mathematical Society." But Mr. Hardy has also noted that, owing to Mr. Ramanujan's ignorance of contemporary advancement in Europe, he was unaware that certain of his results had been either already discovered or anticipated by mathematicians there. Similarly in other sciences. It is also to be noted that *the deepest interest is attached in the scientific world only to problems engaging the attention of the greatest men of the day*. No notice will be given for instance even to a brilliant article on the corpuscular theory of light at the present day when people have come to have unbounded confidence in the electron theory. And it is impossible for any investigator to become acquainted with present day problems in the absence of leading scientific journals.

An important necessity in these libraries is access to the back numbers of the leading journals, and to the original memoirs of the first investigators. The advantages of having access to original memoirs cannot be overestimated. In them we can see exactly and clearly how the subject arose in the mind of the investigator, and what problems he had to face before he discovered important results. Text-book writers are at best clear and clever parrots, expressing the thoughts of investigators in a manner in which all students of average capacity can comprehend them. But it is only in original memoirs that we can actually see the mind struggling for enlightenment, and feel how at last



darkness is dispelled and light revealed. Calculus with its sister analytical geometry has expanded into a marvellous mathematical method. "more daring in its speculations than anything that the history of philosophy records;" and this method is responsible for the recent mathematical advancement, which has been characterised as "the most astounding of intellectual creations, projecting the mind's eye through infinite time and the mind's hands through boundless space." But the study of calculus from the writings of Newton and Leibnitz, or of the Laws of motion from the *Principia* has a usefulness and a charm peculiarly its own. Therein only can we find active stimulus to thought. It is on these considerations that Prof. Wilkinson in the first conference of the Indian Mathematical Society, held in Madras in January 1917, pointed out that the absence of good libraries makes it impossible in India for any one other than a genius to make his mark in the scientific world. Alas, how true!

Another facility which is badly wanted in our universities is the existence of study rooms. One chief advantage in the university libraries in Cambridge and Oxford is the large number of study rooms for various subjects, in which a student may find not only books but also quiet. In India masters are often huddled together in one room—in high schools *all* are together—in which nothing more is possible than jolly talk or familiar slang. Serious attention to regular work even is impossible, not to talk of higher studies. No college either here or in Madras has thought of providing study rooms for its lecturers. The public libraries in Bangalore and Mysore appeal only to men in quest of general culture, not to students of science.

Still another factor the absence of which hinders to some extent the thorough study of various subjects is the higher classes in the university. The science or mathematics taught to the B.A. or B.Sc. classes is but the rudiments, and only an introduction to the really fascinating modern advancements. A professor anxious to study various subjects can find only in post-graduate students an opportunity whereby he will make his own knowledge clearer and will be confronted by various problems the solution of which will enable him to make important researches, sometimes in conjunction with students. *For teaching is the first opportunity in the study of a subject which occasions distinct reflection.* Something in this line has been done in Madras since the institution of the honours courses, in which students are required to take two special subjects in which the knowledge expected is of a fairly high order. Encouragement in this direction is also afforded by the university extension lectures for advanced students.

If the facilities above pointed out are offered, I am of opinion that at a very early date the blame attached to professors and students in Indian universities,—that they are incapable of high research—will tend to be falsified. Though they may not be able to make monumental researches of the type of Newton's or Helmholtz's, it will be found that they are capable of some research work worth the name. It is more the want of facilities for study that is keeping them backward than want of ability. And one important point of which we should take note is that we cannot expect *direct* advantages equal in money value to what is spent. Such a spirit is unscientific. We should remember that education is a national investment. "It will be profitable as a mere investment to give to the masses of the people much greater opportunities than they can generally avail themselves of; . . . less direct, but not less important, is the aid given to production . . . by scientific work such as that of mathematics and biology, even though many generations may pass away before it bears visible fruit in greater material well-being."\*

C. KRISHNAMACHAR.

\* Dr. Marshall in his *Principles of Economics*.

## A COMPLAINT ABOUT "CHITRA."

CHITRA (the drama, *Chitrangada*, not the volume of lyrics entitled *Chitra* in the Bengali) is one of the most belauded works of Rabindranath Tagore. It is acclaimed for its exquisiteness, its truth, its power; and it is not merely read, but performed (as in Bangalore last year) with conspicuous success. Mr. E. J. Thompson, in his book on the poet, is fervent in its praise. It "is itself an epitome of all the songs he ever sang, a glorious thing throbbing with lyrical power and beauty. . . . The reader can see how masterly it is, in whole and detail. It is one of the summits of his work, unsurpassed, and unsurpassable in its kind . . . . In it he had no double purpose to serve, but simply followed Beauty."—Mr. Thompson tells us that the play met with much criticism when it was first published, and "was scorned and abused as 'sensual'." Of all accusations that was the most palpably absurd, and surely no one would advance it to-day. Nor could any one deny the loveliness of the play, or the profound truth of much of it. Yet there must be many who, like the present writer, are left sadly unsatisfied by *Chitra*, and who, indeed, despite both its loveliness and its wisdom, find in it a radical unfaithfulness both to beauty and to truth.

Its theme is that of human love—its intensity and absorption in the time of youth and beauty, its change to something stronger and more enduring when youth and beauty pass away. The treatment is symbolic. Here you have no particular people: Arjuna and Chitra have no particular qualities, but stand simply for the human race. They are Everyman, Everywoman, and the problem facing them is that of human wives and husbands from the beginning to the end of time. Rabindranath is thus giving us his view of one universal phase of human life. The presentation is a triumph of poetry; but—to put it plainly—one hates the view. Rabindranath's thought and attitude here has apparently satisfied and delighted innumerable readers, and one wonders whether they realise the implications.

Chitra is given by the gods superlative loveliness for one year, that she may win the heart of Arjuna. Before the end of that time he is already somewhat weary of her. All this time he has been absorbed in her, but now he begins to hanker after the world of men and action once more. But Chitra, before this loveliness was given her, had been

brought up as a man, and trained to all manlike deeds. Therefore, when her beauty vanishes, she is already prepared to become a meet companion for the strenuous and nobler part of him. Chitra's manlike strength and prowess is allegorical: it represents to us the faculty in woman for really sharing her husband's life, and it is noteworthy that Rabindranath seems to admit this potency in woman. But alas! this sharing by the wife of the husband's thought and action is made to supersede, as it were, is elevated high above, that world of beauty, of dreams, of enchantment, in which they first have loved one another. "All that is past," the poet seems to say; "and now they enter on a nobler union." Surely this is heresy both to beauty and to love. For in all love, and in all beauty, there is a truth and wisdom, an insight, and an energy, with which no other can compare. It is there in the hey-day of love; and when that is past the devotion that remains is sanctified by that memory. Love, beauty, the rendering of beauty in art, possess a finality of truth transcending not only the truth of any words but also the truth of thought and action. "The rest may reason and welcome: 'tis we musicians know." Plato's *erastes* is the real judge of things, and above all the real venturer forth, the real discoverer: he is poet, and therefore best philosopher. It is "the lover and the bard" that send up to God the music which "we shall hear by and by." This element should be present in the representation of that first year of the love of Chitra and Arjuna. If it is not present the symbolistic separation that excludes it is falsity. Life and love ought not to take a nobler turn at the changing point of this play. The nobility should have been there already, and the memories of Chitra and Arjuna should have been such as to illuminate the rest of life.

There is another objection to *Chitra*—of a more definite and practical kind. It is an objection to the position of Chitra, to woman's position in this world as the poet conceives it. His view of this matter is known. Woman exists for man's sake: that is hardly to put the idea too crudely. Her personality is not independent, and valid in itself—her development (for example, by education) is not an end in itself but a means whereby she may be a better minister to man, and a better fosterer of him. This is an old idea, and one on which it is possible to look with loathing. The chief end of woman's life is not the giving of adequate nurture to her sons, and adequate service to her lord. She is worth every atom as much as they. Her development is as truly an end in itself as theirs. Her sacrifice for them and theirs for her are precisely similar obligations. Her sons have no greater claim upon her than her daughters. The contrary belief belongs to the ages of primi-

tive darkness ; but it is found in *Chitra*. It emerges again and again in the abasement of *Chitra*.

"Could I but exchange," she says at the beginning, in telling the gods of her love—"Could I but exchange my youth with all its aspirations for the clod of earth under his feet, I should deem it a most precious grace." There is beauty in such an attitude, the beauty of infinite love and humility. It is fit matter for poetry, and we are familiar with it there. Such loving self-abasement has in woman a peculiar grace. But man, on his part, ought not to be less reverently humble. Arjuna, however, knows no such mood. He does kneel at her feet, "the love-hungered guest at your door," but that is not humility. He does cry,—“Ah, I feel how vain is fame, the pride of prowess! Everything seems to me a dream. You alone are perfect.” This, in one so rich in fame and prowess, does look like due humility. But how does the tenor of the play teach us to regard it? As delusion, passing error, the dream of a day. It is the love of her loveliness that induces such reverence, and the loveliness is no reality, and the very show of it will be gone within the year. As *Chitra* says,—“Alas, it is not I, not I, Arjuna! It is the deceit of a god.” We are to understand that she bows before the reality in him, he before the unreality in her. Do lovers of this play really believe in this, and do they commend and encourage such an attitude in womankind? It is a comfortable and flattering position, and accessible to the poorest specimen of man ; but is it right?

Naturally, then, it is *she* that woos *him*, in a manner disconcerting to any well-nurtured conscience ; and at the end, when her beauty is departed, she is a humble suppliant for his continued grace and favour. A very striking passage is that at the beginning of Scene IX, ending with the significant words —“If the flower-service is finished, my master, accept *this* as your servant for the days to come!” From one service to another, and that is the sum of her destiny. There can, of course, be no better description of life than “service,” but to describe woman’s destiny as the service of her husband is a travesty of life. It may be answered that she is content with it—more than content, finding sublime satisfaction therein, and indeed the fullest realisation of her own self. Certainly she is given to making the best of things. As an individual she does this, and there are many parts of the world in which from generation to generation the whole race of woman has thus been subject, accepting the position perforce and glorifying it by devotion. Aspiration, emotion, energy must take the outlets that are open. But elsewhere the opening of other channels has not meant a

diminution but rather an increasing and ennobling of domestic love and helpfulness, and the help-meet is most truly the help-meet when she is more also.

The most significant touches in the play come at the end. What is the crowning hope of Chitra's heart as we hear her speak for the last time? She hopes that their child will be a *son*: that will be a kind of vindication of her in the eyes of her master! She does not say she hopes this, but she dwells on the idea, and declares that if it is so—"I shall myself teach him to be a second Arjuna, and send him to you when the time comes, and then at last you will truly know me." Obviously (and this fits in with the doctrine) the birth of a daughter would not produce the same profound spiritual union between them. In the man-child only can the noblest in the mother's self be seen!

The last words that Chitra addresses to her master are these: "To-day I can only offer you Chitra, the daughter of a king." Are we wrong, unjust, in finding a world of meaning in these words? We interpret them as the whole bearing of the play seems to demand. The stress of finality is upon them, and we take it that they are meant to be of prime significance. "Chitra, the daughter of a king." That is her title, her claim, her worthiness. She is not yet the mother of a man, but she is at any rate the daughter of one, and that man is a king. It is dramatic, of course,—Chitra's own humility again, and the self-effacement of womankind. But it is placed here, and stressed, and left before us as the final word, as if it were indeed the truth and the heart of the matter. It is, we believe, the heart of the matter from this poet's point of view; and that is our complaint.

What is wanted here is a new "Copernican change." Long ago it was proved amid incredulity, scorn and persecution that this earth is *not* the centre of the universe, that it is not the nature of the sun to revolve submissively and reverently around it. An immemorial belief was thus overthrown,—and religion itself was supposed to be endangered by the convulsion. Similarly the day is bound to come, though persecution may attend its coming, when this other truth shall find acceptance everywhere,—that woman is no revolving satellite for man in his central glory, existing to enlighten and to comfort him, and help him towards all prosperity—that, rather, she is in her own right a star, a sun, moving by her own nature in her own heaven-appointed way, sparing him much of her light and continually blessing him, but not concerned solely with gyrating round him.

J. C. ROLLO.

## AN EXAMINATION NOTE.

"THE far-spreading influence, in the latter half of the nineteenth century, of the doctrine of evolution."—So ran the last essay-subject in the B A. degree composition paper of this year. Many are the strange things that one comes across in examination papers and never has a chance to comment on. But it is seldom that there is a disastrous thing, and when one occurs an opportunity for comment must be made. This is being written in the hope that some of the candidates may see it, and may think better of an idea—an attitude—which, by the by, has nothing to do with marks, these being unaffected by false doctrine.

A number of the candidates have got hold of the idea, outworn many years ago, and as false as any notion can be that the doctrine of evolution struck a deadly blow at religion. They think that it is axiomatic, now, that man, in his entirety, is a product of development from lower orders, and they make bold to refer to the conflict between this "fact" and what they consider the Christian belief that God, by a specific, intervening act, created man in his own image. They should not speak thus summarily of Christian doctrine, for they have had no opportunity of learning enough about it. This, however, is not the point, for we are not concerned here with Christianity in particular but with religion in general. They think that what they deem the contradiction between evolutionary fact and Christian doctrine is more widely significant, and that all religious belief and faith become discredited and vain because of the uniform process of development defined by evolutionary theory. Thus their error is twofold. They are not aware of present-day difficulties as to the range of application of the evolutionary doctrine; and they make the most serious error as to the effect of this application, however wide, upon religion.

No religion since the discovery of evolution! That, however, is not how they put it. What they say is—"Religion, in these enlightened days, has nothing to do with old belief or dogma. It has, indeed, nothing to do with God. Our religion is an 'ethical religion' now, and the only things that matter are uprightness of conduct and the service of humanity. This is the modern, and the universal, religion." It is a rather melancholy discovery that among our students there are so many who have not the slightest conception of what the word *religion*

means. Religion, they think, can be ethics. The rule without the impulse, the imperative without the power, the path without the goal, the endeavour without assurance. "Ethical religion" is talked of, and the phrase is not realised to be meaningless. The simple, cardinal fact is not understood, that apart from personal knowledge of, and personal relationship with, the Deity there is no religion. If the doctrine of evolution had destroyed this, by destroying beliefs essential to it, then this doctrine would indeed have given a death-blow to religion,—and the ethical substitute would sadly fail to keep the world going.

But here we come to the other crudity, the idea that evolution does thus conflict with faith. The apparent conflict between science and religion worried most of us in the days of our youth, and it worries now the student who really wants to work things out for himself. The curious thing about these essayists is that they are not worried, but are prepared most light-heartedly to let religion go. All one can do is to suggest to them that the loss is more than they can afford, and to urge them to think things out,—as did Tennyson, for example, with whom they are familiar. He was deeply troubled by evolution, but he would neither lightly lose nor lightly keep his faith. He would no doubt have agreed with Tolstoy that the only logical outcome of disbelief in God was self-destruction. It would do our examinees good to read *In Memoriam*—in which they will not be examined! And as regards the bearing of the evolutionary doctrine, will not those students ask themselves just how far it takes us, even if it be accepted in an extreme and unproven form?

It describes a process: does it explain it? It speaks of adaptation and development: why did this ever start, who started it, whither does it tend, what does it *mean*? What is the significance of *any* such process? Does that significance lie in the wretched, primitive beginning or in the complex and glorious end? Does the child really explain the man or does the man explain the child? Does value lie in *origin* or in *attainment*? Was not Aristotle speaking with insight when he said that what is last in time is logically first? In trying to answer these questions they will get beyond their powers and the powers of anyone, but long before they reach that limit they will have found their error. And probably they will reach this positive conclusion—that supreme intelligence at one with supreme love originated and upholds the process and the world in which it is revealed.

J. C. R.



## THE DRUM-BEAT OF ANGELS\* (I).

1. When sleep once sealed my outward sense,  
And wrapt my soul in joy intense,  
I dreamt—a distant drum I heard.  
In human voice it spoke. Each word  
Like honey drop sank in my heart.  
Its tone and tenor made me start :  
“ All Truth is one, and God is Truth,  
Beside him nought exists in sooth,  
And Truth is Love, and God is Love.”  
So angels beat the drum above.
2. “ All things existing, false or true,  
Exist cognized as one of two :  
The self, enjoying goods of life,  
Or fretting over ills so rife;  
And non-self, still the fertile source  
Of joy and pain, which with their force  
Constant assail and overpower  
Embodied beings every hour.  
The self is seer, all else seen,  
Their natures such have always been.  
The body seen is not the self;  
And though the self feels weal and woe,  
This self is God, the world, dumb show.
3. “ Man’s bondage is from ignorance ;  
And sensual pleasures—life’s romance—  
Are short-lived all. Seek knowledge pure  
That steeps the soul in endless joy,  
And brings release whose sweets ne’er cloy.
4. “ Who knows the knower and the known,  
He makes true happiness his own ;  
The knower he, the rest is known :

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\* A free translation of *Vedānta Dīpikā*, an exposition of Vedānta by Nṛsīṃha Sarasvatī Tīrtha.

## THE DRUM-BEAT OF ANGELS

To him who knows, no ills can come."—  
Even thus proclaimed the heavenly drum.

5. "Both bliss and pain we see around  
That lead to tendencies profound.  
The one we court, the other fly.  
'Tis Brahmic instinct in the main,  
For God is joy and all else pain.
6. "Lo! God is whole and soul His part  
Though under countless ills we smart,  
The soul is but a spark divine.  
To knowledge objects give their form,—  
To mental moods do acts conform.
7. "How then can one by acts know God?—  
For will is under fancy's rod,—  
We do or this, or that, or naught,  
But know or see one only way,—  
As objects are, or seem they may.
- 8-10. "Know Brahman as He truly is—  
Your self—and thus obtain release  
To Him in prayer direct your thought,  
About Him hear, and meditate  
On Him alone, whate'er your state.
11. "And would you fain control your sense,  
And self-denying life commence?  
Renounce low joys? Or plunge in them?—  
No matter how you are inclined,  
Right knowledge aye release can find"  
The drum-beat ceased a while to sound.  
As I in wonder looked around,
12. Again the silver notes began,  
To this effect their purport ran—  
"Your castes and states of human life—  
A mere convention, be assured!  
Can these release the soul immured?

13. "The world perceived, your life therein,  
Your service done to gods of tin,  
Are all delusion, through and through—  
False joys ! Renounce them. Rather seek  
To know your self,—and bounds will break.
14. "Some works and meditation try,  
On faith and worship some rely,  
And think by such device to buy  
The priceless nectar of release !  
Vain hope, inspired by phantom dance—  
Of dense primeval ignorance ! "
15. The heavenly drum the angels beat,  
Singing aloud in voices sweet.—  
"Vain, vain are forms and ritual,  
Poor understanding's edge they dull,—  
Give up vain talk, vain argument,  
Nor build high castles in the air :—  
To rend the veil of Maya, dare !
16. "Behold that under guise of soul  
Lives God supreme, its final goal ,  
Know each is still the other and all,  
And golden fetters galling sore  
Of birth and death will gall no more.
17. "The self once grasped as all in all,  
No ills of life need thee appal ;  
Thou art the self of even death,  
And thou as Rudra dread can'st slay  
The dark-browed god, thy easy prey.
18. "To fruits of action have no eye,  
For power or riches do not sigh,—  
All owning time's tyrannic sway;  
Since earthly or celestial joys  
One moment please like baby's toys.  
  
"Proud kingdoms, empires, dynasties,  
That long afflict, torment, or tease,

Like bubbles on the hurrying stream  
 Shall burst and vanish in the air—  
 And pride shall kiss the ground, beware !

“ Put more of truth and love in life  
 And less of falsehood, malice, strife ;  
 Shun selfish creed, and harmful greed ;  
 Nor boast aloud of wanton slaughter,  
 Nor shed defenceless blood like water.

19. “ By subtle grasp of all as one  
 Alone can Brahmic bliss be won :  
 How can the gross-eyed seize the truth ?  
 Sweet love and tender sympathy  
 Consist not with plurality.

20. “ The men of holy works return  
 To life. In them desires still burn,  
 Subjecting them to birth and death,  
 And all the woes that these imply ;—  
 The wise are neither born nor die.”

The air is filled with odours soft  
 Of primrose, lily, borne aloft,  
 On wings sweet-laden of zephyrs cool.  
 I feel the presence of the gods :  
 They dance and sing in heavenly modes.

21-22. “ Lo, pious work and vedic rite  
 Lead to short joys depicted bright,—  
 To joys partaken after death ;  
 While wisdom’s ceaseless bliss ye taste  
 At once,—unless this life ye waste.

23-24. “ What then is thought concentrated worth,  
 Delights of sense, or stores on earth,  
 Compared with draughts of wisdom deep ?  
 Vain, vain, is lore ; and works are vain ;  
 None other can avert life’s pain.

25. “ Rik, Sama, Yajus, have their place  
 In life’s swift unilluminated race,

While yet the soul in mid-sea sails ;  
But when is reached bright wisdom's shore,-  
They serve no more, they serve no more.

26. " Disinterested actions wean  
The mind from low desires unclean ;  
And meditation steadies will.  
But knowledge, true, deep-rooted, leads  
To sweet release from bonds of deeds.
27. " When in the fire the seed ye roast,  
Its power to sprout for aye is lost.  
Enlightenment restrains the will,  
Which then its tendencies retracts,  
Life's tragic scenes no more enacts—  
Thus when is shuffled off this coil,  
The soul has past beyond all toil.
28. " Until ye see desires are quelled  
By wrongs fought down and truths upheld,  
And, proving life's allurements all,  
Ye tear through tangle of hope and fear,  
Ne'er dream that peace divine is near.
- " The unenlightened man is bound  
By duty stern to those around.
- " Inaction but behoves the sage,  
In whom the fires have ceased to rage ;  
Nor good nor ill can him afflict.—  
The mind that harbours vaguest wish  
Must swim from shore to shore like fish.
29. " The unlent glory consummate  
Of radiant self immaculate  
Would brook no spot, or ugly flaw ;  
Its beauty can no sin obscure  
From him who knows his self so pure.  
What ills can him assail, or pain ?  
What can he know of sin or stain ?

30. "Thou seest all things both far and near,  
Even death ; but who can see thee, seer?  
Can seer be more than one or change ?  
Hence thou art Brahman e'er the same ;  
The rest, mere glamour,—form and name.  
While objects perish on all sides,  
The self as witness aye abides.

31. "Poor acting and enjoying souls,  
Paying for pleasures heavy tolls,  
Are Jeevas in Avidya clad ;  
While God who spreads his Mayic veil  
Unfolds this world of joy and bale.

"Both Maya and Avidya false,  
That serve as separating walls,  
How can they soul from God divide ?  
The spell of nescience broken, gone,  
Ye learn to see that these are one.

32. "This formless attributeless self—  
Unreached by worshippers of pelf,  
Of Moloch fierce, and Belial lewd—  
All forms and attributes assumes,  
As sun it gleams, as cloud it glooms.

33. "Why then among yourselves contend,  
And loud the air with outeries rend,  
Each sect claiming predominance ?  
No one is high, and none is low,  
But as his life and conduct show.—  
With stony heart and brutish claw  
One is the worser Panchama.

Know Dvija by his holy life,  
But not by odious party strife ;  
And Vipra by his Vedic lore,  
In spite of sects of every hue,  
And high pretensions old or new,  
Who knows the self is Brahman true.

- 34-35. " If all be self, and self all be,  
Behold complete identity  
Of cause and multiform effect.  
Existence, bliss, and consciousness  
Comprise the world, no more, no less
36. " An actor strange without a peer,  
Himself the actor and the seer  
Who acts all parts, devoid of fear,  
On stages, sleep, dream, wakefulness,  
This soul is God. Can he be less ?  
Who knows it, what can him distress ?  
Knowing thy self runs as a thread,  
Connecting scenes of joy and dread  
All through the three succeeding states,—  
The scale that clouds thy vision falls,  
And nothing vexes or appals.
- " Old time and space, causality—  
O what can these but bubbles be,  
That rise and float on life's high tide,  
While waking, or while dreams betide ?  
But, wrapt in sound and dreamless sleep,  
When memories no impressions keep,  
Nor summon their terrific band,  
Who feels, or can, plurality,  
Time, space, or grim causality ?
- " And change and movement—what are they,  
Unless ye see or feel them, pray ?  
Who sees or feels in dreamless sleep,  
Immersed in waveless, blissful deep ?  
The basic consciousness that spreads  
Through all the states of self, nor dreads  
The moods of mind or Nature's freaks,  
From no external source it seeks  
For aid, and can itself maintain  
Till from itself all spring again.
- " The luminous self, it thus is clear,  
Resolves in sleep into the seer ;

## THE DRUM-BEAT OF ANGEL

And when, at will, it dreams and wake  
Creates the worlds that all around  
In panoramic views abound.

“ The not-me is but me transformed—  
A task in sport by me performed ;  
One boundless sea of consciousness  
Is all that is, is all we see,  
Is all we feel, is you and me.

“ With dreaming self the dream-world ends,  
On waking self *its* world depends.  
In sleep the worldless self persists ;  
And thus this world with radiant orbs  
The self protrudes and re-absorbs.

“ Dost thou love life ? Then act thy part  
With courage and unselfish heart,—  
Since righteous acts ennoble life.  
Should higher wish in thee appear,  
Relinquish not yet duty's sphere,  
Fly not to woods, quit not thy house :  
Like Janaka and Gargi's spouse,  
Essay the God in thee to rouse,  
And God is universal love,  
As sung by saints and powers above.

“ The self is real, self is bliss :  
Who knows not this but lives amiss,  
For quest of truth life's purpose is ;  
And till the dawn of truth the self  
Will ceaseless birth and death impose,  
Giving no rest or sweet repose.”

The drum now quickly changed its strain,  
In novel mood it beat again.—

“ 'But if the world sweet Brahman is,  
Why all this pain, this want of ease ?  
The bitter ills that on us seize ?



“ The plague, the pestilence and war,  
That peace and beauty wholly mar,  
The early death, the broken heart,  
Thriving of vice and guile and art,  
The signs of anguish, tears that start  
From gentle eyes, the cruel pang  
Of merit that in poverty  
Plods on in sad obscurity ?

Is there no God, poor innocence  
To shield, or strive in her defence ? ’

“ Enquirer, cease. All evils rise  
From selfish views, unholy ties  
Of self to bodies of the states.  
Desire and hate are at the base  
Of tragedy in every case.  
And what is war but vulpine greed,  
Of countless miseries the seed ?  
And what are fell disease and death,  
To whom the truth enlighteneth ?

“ O trust not in an alien God,  
Pursue not fancy’s paths untrod ;  
’Tis ignorance that wishes breeds,  
From folly vexing pain proceeds.

“ Why dost or good or ill ascribe  
To Heaven, and try its grace to bribe  
By flattery ? ’Tis in thy hands  
To break the old, or forge new bands.  
Let none for woes endured e’er blame  
The world or God. All deeds of shame  
Spring from desire and selfish greed,  
Though masked beneath a lofty creed,  
The ignoble plea who will believe,  
The shining witness who deceive ?

Sing then the dirge of dark-browed death,  
He’s crushed ; no more he frighteneth.  
The world within his horrid hold  
Writhing no more he shall behold ;

And thus the soul from bondage free  
Regains its pristine purity.  
Lewd custom, superstition dark,  
Now void of life, grown stiff and stark,  
And privilege proud, of hue and birth  
With all hypocrisies on earth—  
All, all are quelled : they scare no more,

The soul has reached the blissful shore,  
And dwells in peace unknown before.

K. A. KRISHNASWAMY IYER.

## REVIEWS.

*Ethics of the Koran.* By M A. Buch, M.A., Baroda.

MR. BUCH already has to his credit a number of books, concerned with the ethics of various religions. From such an author a book on the ethics of the Koran comes as quite a normal occurrence. It is an interesting little book dealing topic by topic with the usual ethical ideas. Indeed it has succeeded in giving in a brief compass the salient features of a book that has been a world-force for centuries. But if Mr. Buch's book deserves to be thus complimented, it is by no means free from the usual defects of his treatment. He has breadth of view and a fine sympathy, but these degenerate into the mechanical faithfulness of a chronicle without any illuminating discussion—philosophical or popular—of the ethical principles which actuate the Koran. Mr. Buch has in his mind the idea that the ethical teaching of the Koran is Vedantic, but we should have welcomed an explicitly comparative study of the two ethical systems. As it is, the author's idea merely amounts to this, that all religion is one and that all morality is one. In many ways this is a true idea, but if it is to be rescued from being a mere dogma the striking differences as well as the similarities between the Koran and the Vedanta will need a fullness of discussion which is conspicuously absent from the book under review.

Perhaps the one respect in which the religion of Mahomed stands in marked contrast to other religions is its enthusiasm for proselytism, often accompanied by militarism. Among non-Moslems the idea of Mahomedanism as militancy is very deep-rooted, thanks to the fanaticism of many a Moslem king. But the spirit of the Koran cannot be rightly confounded with the bigotry of its followers. The noble passage of the Koran, "I shall never worship that which ye worship, neither will ye worship that which I worship. To you be your religion, to me be my religion," testifies to the freedom of the human spirit and discountenances the absurd iconoclasts who imagine that force can change the heart of man. The Koran hardly countenances the fatally simple doctrine that the gates of Paradise are easily opened by killing an "infidel." Like all genuine moral teachers Mahomed yearned to win the hearts of men through kindness. "Summon them (i.e. non-believers), he says, "to the way of thy Lord with wisdom and kindly warning: dispute with them in the kindest manner." To a true

Muslim war becomes a justification only in self-defence; once such a war is started, it has to be fought to the bitter end without remorse, without flinching. This explains, perhaps, the part that the sword has played in the propagation of Mahomedanism. As has been cynically said, there never was a war waged which was not sought to be justified in the name of self-defence.

In the Foreword Mr. Buch discloses the motive which led him to a study of the Koran and the writing of his little book. That motive is the ideal of the Hindu-Muslim unity. Nothing has contributed so much to divide mankind as the idea that each community must study and cherish only its own ethos, and that all the rest is not worth studying. Such an absurd self-complacency can be destroyed only by knowledge. Mr. Buch's book will contribute to this end, as non-Muslims can readily gather from his lucid summary that genuine Mahomedanism is a force that makes for peace and goodwill, a power that makes for righteousness.

X. Y. Z.

*The Analysis of Mind.* By Bertrand Russell. Allen and Unwin. 16/-net.

A book from the pen of Mr. Russell is always an event in the world of philosophy. Since the days of J. S. Mill no philosopher has been so chameleon-like as Mr. Russell; but this constitutes his essential merit, for though a logician he makes no fetish of a merely logical consistency, and does not fear to retrace his steps whenever truth makes such retracing a necessity. Most of the works of Mr. Russell have a decidedly psychological note about them, but the book under review is the first one to be devoted purely to psychology. Yet the interest of it is not purely psychological, for behind it works in no mistakable way a metaphysical theory. He makes no secret as to the ultimate aim of the book. "The stuff of which the world of our experience is composed is, in my belief, neither mind nor matter, but something more primitive than either." He speaks of it as a sort of neutral stuff, denies that his view can be labelled either as idealistic or materialistic, for he shows—or at least aims at showing—that psychology is closely related to physics, and yet physics gets more and more to treat matter as immaterial. In short he wants to study what mind is, and comes to the conclusion that in the last analysis it is nothing but sensations and images. We have here an echo of the 18th century Humian psychology, albeit a 20th century echo.

Mr. Russell can certainly not be charged with Humian scepticism, but it is an open question whether he can escape being charged with naturalism. His previous works like "Our Knowledge of the External World" and his various articles had already made many suspect that his new realism was only a new garb for naturalism, but now that in the present work when he directly attacks the problem, "what is mind?" and for 300 pages and more seeks to show it is nothing but sensations and images, there is no room for any uncertainty, and now at least—unless Mr. Russell changes his views, a by no means improbable contingency—we know where he stands.

The general method he pursues is that, of alternative explanations of a phenomenon, the most simple so far as it is not inadequate should be treated as the most probable. But as he himself recognises "there is no enemy in thinking so deadly as a false simplicity" (p. 16), and we are not sure if Mr. Russell has not given us simplicity at the expense of adequacy. It is noteworthy that he starts with a marked bias in favour of the Behaviourist School of Prof. Watson, which utterly discards introspection as a method of psychology and reduces the study of mind to a study of animal or human behaviour. Mr. Russell does not go the whole length with this school of thought. On the strength of the Freudian discovery of the unconscious and the acknowledged difficulty and fallibility of introspection, he argues against the work of introspection, but he recognises that it cannot be absolutely relegated to the realm of the useless; since it does discover phenomena like the images which are a locked mystery to the merely external observation of the Behaviourists. The one definite point at which Mr. Russell rebels against Prof. Watson's school is the question of images. It has come to be a known psychological fact that scientists and men of learning generally markedly lack imagination. The learning of Prof. Watson may perhaps account for his antipathy to images as one of the cardinal psychological factors, but fortunately Mr. Russell's learning has not affected his imagery and insists on awarding to images an irreducible unique existence.

But having come to this point Mr. Russell vigorously reduces in chapter after chapter all the well-known mental phenomena to sensations and images. In the very first chapter the claim of consciousness to be considered mental is boldly controverted. Memory, words and meaning, general ideas and thought, belief, truth and falsehood constitute further topics of discussion, discussed with the lucidity and the verve that are half the charm of Mr. Russell's

## REVIEWS

philosophy. The James-Lange theory of emotions, in spite of its patent paradoxical nature and in spite of the battering it has received at the hands of Dr. Ward and other eminent psychologists, receives Mr. Russell's benediction. At times the treatment of the various topics mentioned above is technical and would lose its force in a bare summary, and there is no room for a full discussion in a brief review. Suffice it to say that no student of Mr. Russell's philosophy can afford to neglect reading his latest book, while a student of psychology will find much that is strikingly suggestive, and much that is old and supposed to be outworn, but presented in a new garb with the freshness of youth. It would be, however, no disrespect to the world-famous philosopher to say that a book which seeks to prove that "mind is a matter of degree, chiefly exemplified in number and complexity of habits" is hardly likely to be a classic which will be thumbed by generations after generations.

A. R. W.

*The Hindu Religious Year.* By M. M. Underhill, B. Litt. The "Religious Life of India" series. Association Press, Calcutta.

THE aim of this work is to describe the fairs and festivals common to the whole of Hindu India ; but the author, being a resident of the Maharashtra, naturally gives greater prominence to that province in his treatment of the subject. The information furnished is of a miscellaneous character, and the book brings together details too many and too local to interest the general reader. But often the author traces the history of the customs and practices mentioned, and tries to interpret their significance. This feature not only relieves considerably the dryness of the details, but also renders the work helpful to students of religion and antiquities. The first chapter, which deals with the Hindu mode of reckoning time, is particularly instructive. The book contains an index and a chart of festivals, which enhance its value for purposes of reference.

M. H.

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*Kanarese Literature.* By Rev. E. P. Rice, B. A. Association Press, Calcutta, and Oxford University Press.

TO THOSE who are interested in the promotion of mutual understanding and goodwill between the east and the west, publications of the "Heritage of India" series will, no doubt, be very welcome. Lovers of Kannada Literature will thankfully receive the second edition of the

"Kannarese Literature," which presents in a small compass much interesting information on the progress and development of Kannada Literature. Some of the topics have been amplified and re-arranged, and the matter has been brought up to date as far as possible. There is no doubt that the present edition will be found very useful not only by the general reader but also by the students of Kannada Literature.

The expression "Kannarese" is admittedly corrupt and therefore it may well be replaced by the term "Kannada" hereafter. The word "exclusively" used (on page 15) in connection with the Jaina Period of Kannada Literature requires to be omitted in subsequent editions of the book.

It is pleasing to note that the author has dedicated the book to Rao Bahadur Praktana Vimarsa Vichakshana R. Narasimhachar, M.A., one of the greatest scholars who have incessantly laboured in the cause of the Kannada Language and Literature.

B. K.

*English Reading Made Easy, by means of a system of marks applied to the ordinary spelling.* By Professor W. A. Craigie. Clarendon Press 2s 6d net.

THIS little book seeks "to provide a simple means of overcoming the difficulties of English spelling and pronunciation," without the use either of phonetic script or of what is known as "simplified spelling." An early training in accurate pronunciation is of the first importance. This has always been neglected in England as in India, and nowadays the advocates of phonetic teaching tend, perhaps, to swing the pendulum too far. The current spelling must, in any case, be the basis of instruction. As Professor Craigie writes in his *Preface*,—"By whatever method the art of reading English may be taught or acquired, the ordinary spelling must in the end be faced and mastered. The only reason which can fairly be urged against doing this from the outset is that it so commonly fails to express the spoken word with accuracy and certainty. That there is truth in the charge is plain enough, but it remains to be proved that the best beginning will be made by setting aside the usual written form, and replacing it by something *not in real use* anywhere among the hundred and fifty millions of people who speak and write English. The ordinary spelling not only holds the field now, but there are no signs of any early displacement of it, and any method of instruction which is directly based upon it has the advantage of dealing with something which is real."—The principles of this book are

acceptance of the current spelling and indications of pronunciation by means of simple signs attached thereto. The method is, of course, that employed in dictionaries, and it is here reduced to its simplest form, while yet comprehensive enough to give really sufficient guidance. Needless to say, it does not compare in subtlety or completeness with the phonetic method. It gives no guide to the *peculiarities* of English pronunciation. The adult foreigner who cannot reside for a considerable period in England can acquire the exact values of English sounds only by studying voice-production and phonetic symbols or by clinging to the company of a normally pronouncing Englishman, a rarer creature than might be imagined. (If, however, he prefers a better tradition, though not now the "norm," he will eschew the Englishman and cultivate the Scot!) The phonetic way is the only quite satisfactory one, and the best of it is that it fits one for the study of *any* language. Nor is the study a dull one: it becomes richly human as one listens to the speech of one's neighbours in one's native agora and forum. It is probable that the method will now be systematically established in Mysore through the enthusiasm of Professor Sell, who has just terminated a period of keen—and distinguished—study of its principles at the feet of the pioneers. It is indeed a recognised principle in England that serious language study must proceed by the phonetic path. Yet we believe that the child's entrance upon that path should not be made very early. The actual spelling, as Professor Craigie says, should be studied from the first; and the burden of the phonetic symbol should not for some time be added. The phonetic system should not be touched until it is possible to learn and apply it in its entirety, and it is a complicated business. Much better for the child are Professor Craigie's few signs, competently explained at the beginning by a teacher. They will guard him from the mistakes that often testify to the lack of this elementary training. He will not pronounce *far* as *fawr*, *pens* like *pence* student as *stodent* or *pretty* as it is spelt.

The book consists of three parts, which, we presume, can be had separately: a first spelling book, a second spelling book, and reading lessons. The second part contains a useful appendix on stressed and unstressed syllables, stating the principles of accentuation and giving a number of typical examples. The selections for reading, which are of course exceedingly simple, are chiefly of the informative type: there are, for example, lessons on the calendar, on numbers, and on English money. Much will be learnt in the reading. We think that the book, and the system, will be of very great value in elementary schools both in



England and in countries, such as India, where the acquiring of English begins very early. It might well be prescribed, but even before this is done the elementary school teacher of English, who is frequently very shaky in his own pronunciation simply because of the faultiness of the present system, will find it an excellent stand-by.

J. C. R.

*A Short History of English Literature.* By Archibald T. Strong, M.A., Litt.D., Associate Professor of English Language, and Literature in the University of Melbourne. Oxford University Press.

THE author seeks to excuse the production of yet another history of English Literature by "the attempt here made to bring the treatment of the subject abreast of recent research and criticism." But the excuse was scarcely necessary. Even in this rather crowded field there is always room for a good book, and this one is very good. It is really "short," containing fewer than 400 not very large or closely printed pages, and needless to say it makes no pretension to completeness—or to suiting everyone's taste. The writer of such a book is peculiarly at the mercy of his reviewers, each with his own view of the relative importance of things, and each with his loves and prejudices. The writer, too, must have his predilections, and if he is a man at all he will put them in, regardless of consequences; for to produce, and cherish, and rejoice in a book that is just a balancing and epitomising of current views is not work for a man. Thus he is assailable at every point by someone. The present reviewer has made a note of a number of things in this book that he thinks might be otherwise. He thinks, for example, that in dealing, however briefly, with *The Scholemaster*, more reference should be made to Ascham's educational ideas; that an account of the influence of *Euphues* should refer to order and clarity, and not merely to richness, variety, and individuality, of style; that the satiric and "sinister" elements in Thackeray are given too great prominence, with unfortunate ignoring of the exceeding delicacy and keenness of his sympathy; that to ignore the spiritual inspiration of Francis Thompson's *religious* poetry and speak as if "deep sensuousness" were the essence of it is to give a strangely wrong idea. Other critics, other objections. The main fact, however, is that here is a brief history of English Literature which contains (on the whole) the facts that are most important and the interpretations that are most just; which seeks to penetrate a writer's thought as well as estimate his art; which takes constant opportunity to indicate—in a most valuable way—relationships and developments; and which, in spite of close-packed matter, does not give the impression of ingenious dove-

tailor," but really does possess style and individuality. We are going to recommend this book to students of all stages, and we recommend it to the general reader also as a thing not only up-to-date and reliable but genuinely *interesting*—partly by virtue of its quotations (not very numerous), but mainly by its own admirable manner.

J. C. R.

*Selections from the Poems of Sir Walter Scott.* Edited by A. Hamilton, M.A., F.S.A. The "English Romantic Poets" series. Cambridge University Press. 4s. 6d. net.

THIS series has been sufficiently praised, and the present volume maintains its high level. While about a dozen of the shorter poems are given, the selections are mainly extracts from the long narrative poems. The serving up of these extracts was, of course, a matter of much difficulty. It had to be done, however, for the aim of this series is, in Mr. Thompson's own words, "to exhibit the characteristic genius of the author," and the narrative poems represent most characteristically Scott's poetic gift. To render such extracts intelligible the editor has provided long summaries of the complete poems, and the book is the more valuable as an introduction to Scott's poetry. There is a full and excellent *Introduction*, which, while professing merely to deal with Scott's poetry, yet is of scope enough to help the student considerably in his study of poetry in general, and of the period to which Scott belonged. The notes are adequate and not excessive, and contain many an illuminating parallel.

*Songs of Four Centuries*—Selected by H. G. J. Turnbull, M.A., I.E.S. Part I. Oxford University Press.

"I HAVE therefore avoided touching on a few matters on which I hold somewhat heretical views." Heresy is good, but to go so far out of one's way to claim it is a trifle quaint, and the reader wonders how far judgment may have served in selection and comment. Scrutiny of the book, however, completely disarms him, for all the editorial work, of which there is much, is first-rate. With reference to each author quoted there is a brief biographical and critical introduction—brief, but astonishingly well packed, just beyond cavil, and really illuminating because the editor has managed to put himself at the point of view of the Indian student who approaches English poetry for the first time. The excellence of the notes is similar: they are just what is required, and their

clear, simple, accurate explanations reveal reliable scholarship behind. Forty-three pieces are contained in the volume, and they date from Ben Jonson to Patrick MacGill. Several have never before appeared in a book of this kind. It may be remarked that the book contains sonnet, elegy, epical extract, and various other things that certainly are not "songs." The heretic should, in concession to the weaker brethren, use words in their current senses.

*Readings in English Social History from Contemporary Literature.—*

Edited by R. B. Morgan, M.LITT. Volume IV, 1603-1688. Cambridge University Press. 4s.

WE have already reviewed at length this series of readings, and all that need be said now is that the latest volume is quite as admirable and fascinating a source-book as its predecessors, and is, like them, admirably illustrated. One's desire is to extract rather than to comment, and so be it. While a number of the passages given are from easily accessible works, such as Earle's, Fuller's, and Evelyn's, others are from such documents as the *Privy Council Register* and the *State Trials*. From the latter of these are taken some scenes from the trial, by Judge Jeffreys at his "Bloody Assize," of Alice Lisle. She was charged with having entertained and concealed George Hicks, a dissenting minister said to have been in Monmouth's army at Sedgemoor. Such an offence was high treason. After Jeffreys' summing-up (too long to quote here) the jury disagreed, but afterwards they "laid their heads together for near a quarter of an hour, and at length agreed," bringing in a verdict of "Guilty."

"Lord Chief-Justice.—Gentlemen, I did not think I should have any occasion to speak after your verdict, but finding some hesitancy and doubt among you, I cannot but say I wonder it should come about ; for I think in my conscience the evidence was as full, and plain as could be, and if I had been among you, and she had been my own mother, I should have found her guilty. . . .

"The Sentence

The Court awards : That you Mrs. Lisle be conveyed from hence to the place from whence you came, and from thence you are to be drawn on a hurdle to the place of execution, where your body is to be burnt alive till you be dead. And may the Lord have mercy on your soul.

"This sentence was afterwards commuted to beheading. She was accordingly beheaded on the afternoon of the 2nd of September 1685, in the market-place of Winchester. ,

"In 1689, on the petition of her daughters, Mrs. Lloyd and Mrs. Askew, the attainder was annulled by Act of Parliament on the ground that the verdict was 'injuriously extorted and procured by the menaces and violences and other illegal practices of George Lord Joffreys, baron of Wem, then Lord Chief-justice of the King's Bench.' "

*French Accidence and Syntax.* By James P. Prior. Harrap. Indian Agents : P. T. I. Book Depot, Bangalore City.

IN this little book of two hundred pages may be found a wealth of information for the students who have already reached a fair standard in French. Professors desirous to proceed to a rapid revision will also find it useful. We might have perhaps liked a better arrangement, but as it is we cordially recommend it to students of high classes and professors alike.

R. C.

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*The Clarendon Series of English Literature.* (a) *Charles Lamb, Prose and Poetry, with Essays by Hazlitt and De Quincey. With an Introduction by George Gordon, and Notes.* (b) *Edmund Burke, Selections, with Essays by Hazlitt, Arnold and others. With an Introduction and Notes by A.M.D. Hughes.* Oxford University Press. 3s. 6d. net each.

THE Oxford University Press has a genius for the production of school and college text-books of new and delightful kinds. This series has already been welcomed in this magazine, and the University has found it "the very thing" for prescription. There are few text-books, if any, that so lend themselves to the various purposes of the university class as these. You have the most notable literature, with sufficient explanation and sufficient sketching of background ; and the critical essays included not merely illuminate the text but help the study of critical method. In the Lamb volume the *Introduction* by George Gordon (is it G. S. Gordon ?) is in itself a particularly delightful essay.

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*English Prose, chosen and arranged by W. Peacock, in 5 volumes.* Vols. I-III. "World's Classics." Oxford University Press. 2s. 6d. net each.

THIS is the best sort of anthology, and the five-volume idea makes possible a thoroughly representative selection, with more than a

mere taste of the work of the bigger writers. For example, in the third volume 46 pages (containing 11 extracts) are allotted to Jane Austen, while in the Lamb section space is found for three of the best essays in their entirety and for three other extracts. Thus each volume is a real companion to the study of the prose of a period, and is a very great convenience to the student. The concluding volumes are to be "Landon to Holmes" and "Mrs. Gaskell to Henry James."

*The King's Treasuries of English Literature* Edited by Sir Arthur Quiller Couch. Dent. Most volumes 1s. 9d. net.

WE have received further volumes in this series, already described and praised in a former issue. For all impoverished libraries—school, private, public—these little books are the things, with their extraordinary range, their fitness and reserve of comment, their daintiness of form. We need scarcely have said "impoverished," for they would adorn any shelf. But in particular we would recommend headmasters of schools to send to Messrs. Dent for a catalogue. (If they are in a hurry the editor of this magazine will lend them his copy.) They will be able to provide their students with all sorts of things they need, and reduced grants will seem ten times multiplied when the best books cost one and ninepence.

## COLLEGE NOTES.

### MAHARAJA'S COLLEGE.

THE UNIVERSITY UNION.—The committee having resolved to celebrate an annual "Union Day," the celebration for this year was held on Sunday, February 26. The idea was that of the student-members, and they organised the entertainment, under the energetic leadership of Mr. S. V. Krishnaswamy Iyengar, the Hon. Secretary, and one or two other members of the staff. Games were played, and a great feast was held, after which the multitude—numbering perhaps two hundred and fifty—adjourned to the College, where a short but really excellent concert was given, chiefly by members of the Union. Perhaps the most successful portions of the programme were one or two more or less impromptu dramatic scenes in Kannada, in which student members revealed remarkable talents as humorous actors. The most memorable event of the day, however, was one which immediately preceded the feast—the unveiling by Professor Wadia of the portrait of Professor Radhakrishnan. Both Mr. Wadia and Mr. Rollo spoke of Mr. Radhakrishnan, whose friendship both of them had enjoyed for some time before he came to this University; and they laid stress not merely upon his exceptional academic distinction but also upon the lasting impression made upon the students of the College—not merely the Philosophy students—by the strength and kindliness of his personality.

A special committee has formulated an elaborate constitution for the Union, and this has been submitted to the University after slight modification by the general committee. Such a constitution is certainly required. Among its most useful features are comprehensive rules for the conduct of meetings, and definite allocation of responsibilities to the various office-bearers. Certain radical changes are proposed, the most important being the *election* of the President from three names selected by the University Council and the rule that the Vice-President shall be a student and shall preside at one third of the meetings of the Union. Most of the rules are founded upon those of the Cambridge University Union. It is hoped that the draft—in general, at any rate—will be approved by the University. It would mean greater efficiency and precision in the working of the Union, and would have the great advantage of giving the student members a more prominent part in the work.

Special thanks are due to Mr Wadia, the chairman of the special committee, who provided both information and moderate counsel!

J. C. ROLLO,  
*President.*

**THE UNIVERSITY UNION Co-OPERATIVE SOCIETY, LTD., MYSORE.—**  
The fourth Annual General Meeting of the Society was held on Tuesday the 28th February 1922, at 4-30 p.m., in the Union. Professor J. C. Rollo, M.A., the President of the Society, was in the chair. The Secretary, Mr. M. G. Lakshminarsu, read the annual report and the audited balance sheet. The fourth annual report, presented to the shareholders at the meeting, ran as follows :—

“GENTLEMEN,

“We beg to place before you the following report for the year under review, with the profit and loss account and the balance sheet duly audited.

“*Share Capital.*—The year commenced with 543 shares of Re. 1 each (fully paid), to which addition of 139 was made this year, as against 95 of last year, making a total of 682, out of which 50 shares were withdrawn, leaving a total balance of 632 shares. We have thus secured 63% of the authorised capital.

“*Revenue.*—This year's business commenced with an opening stock of Rs. 848-14-6, to which an addition of Rs. 2,763-15-5 was made. The aggregate amount of sales came up to Rs. 2,996-0-3 (Rs. 133 being the amount of credit sales). We have on hand, as on 31st December 1921, Rs. 860-2-3 worth of stock, which has been valued at cost price. The transactions of the society resulted in a gross profit of Rs. 243-4-7. During the year we received in the shape of interest and discount Rs. 6-13-0, which raises the total profit to Rs. 250-1-7.

“*Trade Expenses.*—The total trade and office expenses of the year came up to Rs. 130-12-1, out of which Rs. 25-9-1 has been deducted, the said sum being 25% of the total preliminary expenses, leaving a net profit of Rs. 105-3-0.

“Consequent upon the change of the name of the Society we had to spend Rs. 102-4-6 for preliminary expenses, consisting of bill books, share certificates, order books, account books, notice board, seal, etc. After debiting 25% of this to this year's profit and loss account, we propose to write off the balance in a period of 3 years.

“After allotting 25% of the net profits of this year to reserve fund,

we propose to distribute, out of the balance, a rebate on the purchases at the rate of 5 pies per rupee, as against 3 pies of last year, and an interest of 4% on the paid up shares.

*“Management.”*—We confess we have not been able, in spite of our contrary intentions and efforts, to place the Society on a scientific and thorough basis. The organisation has just emerged from a transitional stage. We hope, with the greater and more earnest co-operation of both the student members and the staff, the Society will be placed on a most scientific and adequate basis in the immediate future.

“We beg to offer our most heartfelt and sincere thanks to Professor J. C. Rollo, M.A., the President of our Society ever since Prof. Shah’s departure, for his unbounded enthusiasm and deep interest in the welfare of the Society.

“Our thanks are also due to our beloved Principal for his deep interest in the Society’s progress, and to Mr H. V. Srikantaiya for his continued and practical service to the Society.

“In fine, we hope, on behalf of all the lovers of the Society, that with the hearty co-operation of all the members, *this institution of high utility will spread its branches far and wide to supply all the legitimate requirements of our university men*, and thus contribute in its own way to the full realisation of a university colony or residential university.

M. G. LAKSHMINARASU,

K. NATARAJAN,

*Hon. Secretaries.”*

*Elections.*—The results of the ballot for the various offices of the Society were then announced.

Professor Wadia, *President*.

Mr. S. V. Krishnaswamy Iyengar, *Vice-President*.

„ P. Sampangi Ramiah, *Vice-President*.

„ K. Natarajan, *Hon. Secretary*.

„ S. Venkatesiah, „

„ B. V. Seshagiri Rao, *Treasurer*.

*Committee.*—Messrs. S. Narahari Rao, Pasha, Mir Ikbal Hussain, N. Rangachar, and M. Shama Rao.

*Auditors.*—Messrs. V. S. Sastry and P. S. Dattu Rao.

The retiring President then congratulated the Secretary, the Treasurer and the members of the committee on the successful work they had done. He paid a very high compliment to Mr. Lakshminarasu, the Secretary, saying that he was a devotee of the Society and the Union,



and gave all his energies and enthusiasm to their work. Next year Mr. Lakshminarsu would be leaving them, and he wished him every success in all his undertakings. He then wished a long and prosperous life to the Society.

Mr. Lakshminarsu, in proposing the vote of thanks to the chair, expressed his gratitude for the terms in which the President appreciated his work. He paid a very high compliment to Mr. P. Sampangi Ramiah, the Treasurer. Had it not been for his ungrudging and untiring co-operation the work of the Society would not have gone on so successfully. He offered the Society's thanks to Professor J. C. Rollo and to Mr. H. V. Srikantaiya for their deep and unbounded love to the Society and their parental care. He then hoped that the Society would occupy an increasingly important place in the life of the University, and succeed in supplying all the legitimate wants of the members.

M. G. LAKSHMINARSU,

*Hon. Secretary.*

The members of the Committee gave an At Home to the retiring office-bearers on Sunday, March 19th. After the photo the members retired for tea, which was arranged in the Union. Mr. K. Natarajan the new Senior Secretary, proposing the toast of the guests, expressed, on behalf of the Committee in suitable terms their appreciation of the services rendered by their loving and enthusiastic President, Prof. J. C. Rollo, and Mr. H. V. Srikantiah, the active Vice-President, and the energetic Secretary, Mr. M. G. Lakshminarsu.

Prof. Wadia, the new President, seconding the toast proposed by K. Natarajan, referred to the genial personality of Prof. Rollo, who was the life and soul of all the activities of the Union and the Society. He stated that Mr. Rollo had been the President ever since Prof. Shah's departure, and that he was the fittest person for the Presidentship, by his devotion and enthusiasm. He referred to Mr. H. V. Srikantiah as being connected with the Society ever since its birth, and said that he has done much practical service in bringing it to the present stage. He also alluded to Mr. Lakshminarsu's services to the Society, and said that any activity in the University Union or the College was inconceivable in which Mr. Lakshminarsu had no prominent part. His departure from the College next year would create a void difficult to fill. He hoped that he himself would be able to walk in the footsteps of Mr. Rollo and Mr. H. V. Srikantiah, and do some good work for the Society.

Professor J. C. Rollo, the retiring President, replied to the toast. He said that he had done nothing for the Society except preside at committee meetings, and remarked that the Society would not have progressed as it had done but for the efforts of Mr. Lakshminarsu, who had taken up the secretaryship at Mr. Shah's desire and had ever since been the mainspring of the Society's work. Mr. H. V. Srikantiah then gave some good advice to the committee on the conducting of the Society, and Mr. Lakshminarsu made a final speech in which he complimented the retiring treasurer, Mr. Sampangi Ramiah, and other members of the committee on their invaluable work.

The meeting terminated with cheers for H. H. the Maharaja, the President, and the retiring office-bearers.

P. SAMPANGI RAMIAH,  
*Vice-President.*

THE COMMERCE CABINET, MYSORE UNIVERSITY UNION, MYSORE.—*Objects.*—(1) The furtherance of commercial thought among its members on sound principles.

(2) Investigation into the commercial and industrial problems of our State.

(3) To support and strengthen the University Union Co-operative Society.

(4) The undertaking of movements calculated to promote the studies of the members of the Cabinet.

*Second Annual Meeting.*—The Cabinet held its Second Annual General Meeting early in February. Mr. A. V. Krishna Moorthy, B.A., B.Com., Assistant Professor of Commerce, presided. The Secretary read the report. The report shows that about 17 meetings were held, of which 6 were ordinary, 5 special, and the rest committee meetings. The average attendance at the meetings was about 12, whilst the total membership was 22.

*Some of the important subjects discussed this year* were as follows :—

1. The place of organisation in business.
2. Business morality.
3. Post-war economic changes in India.
4. Organized markets.
5. Nationalisation of railways.

There was an impromptu debate specially arranged for the purpose of finding out the ability of our members to speak on highly technical and commercial subjects without any previous notice. The subjects

discussed were either of economic or of commercial importance. The most important of them were :—

- (a) That India requires a gold currency.
- (b) That there is no ideal banking system in India.
- (c) That India requires protection for her young industries.

The discussions were interesting and comprehensive, and members exhibited much ability and originality in their speeches.

*The special committees and their work.*—Last year just before the summer vacation certain special committees were appointed—

(1) To study labour and poverty problems in our State, and report thereon.

(2) To investigate the industrial possibilities of our State.

(3) To carry out co-operative propaganda in all the schools and colleges.

(4) To investigate the prospects of a commerce graduate in Mysore.

The committee for "the investigation of the prospects of a commerce graduate in Mysore" produced its report on the 10th November 1921. The report exhibits the laborious work that the members of the committee have done. They have inspected various factories, interviewed many business men and officers, and referred to many periodicals. The report is exhaustive and the recommendations suggestive. It is under contemplation to publish the report—after incorporating the suggestions of Messrs. A. V. Krishna Moorthy, B.A., B.Com. and H. V. Srikantiah, B.A., LL.B., B.Com.

The other committees have not yet completed their investigations. We trust their work will soon be completed.

*Public lectures, etc.*—Last summer, Mr. M. G. Lakshminarsu, who was touring in the Shimoga District in connection with the Cabinet, delivered a lecture on "The present work for the future," Mr. M. Sivaram Krishna Iyer, B.A., Headmaster of the Shimoga Collegiate High School, presiding. The lecturer touched upon the advantages of physical culture, the dignity of labour, the danger of class factions, untouchability, Swadeshi, the evils of drink, and student organisations." Mr. Lakshminarsu, Mr. P. Sampangi Ramiah and Mr. M. Narayan Rao visited some of the labour quarters in Bangalore last summer, and spoke to the people on their duties and how to improve their economic condition.

*New Programmes.*—1. To arrange for an oratorical contest to be held annually under the auspices of the Cabinet, the contest to be open to all the Commerce students past and present, and the subject to be either a commercial or an economic one.

## COLLEGE NOTES

2. With the help of the past students to organise an "Old Boys Association" of all the Commerce students.

It is a matter of sincere congratulation that the Cabinet is carrying on a very important and practical work. We trust that it will have a long and proud period of life, and fulfil the high ambitions of its organisers.

M. G. LAKSHMINARU.

**THE THIRD YEAR COMMERCE "AT HOME."**—The Third Year Commerce students were "At Home" to their Professors and Assistant Professors on the 31st March, 1922 in the Union. The programme included a group photo and lunch. Mr. Lakshminarsu proposed the toast of the guests, and Mr. A. V. Krishna Moorthy replied to the toast.

M. G. LAKSHMINARU.

**GAMES.**—The last term of the year is a slack season as regards games, but a very successful inter-class tennis tournament was held. During the Christmas holidays our cricket, football and hockey teams visited Madras. All rendered a good account of themselves in matches against college and other teams, and in cricket and football our men simply carried all before them, establishing a record of continuous victory. A cricket eleven of Central College and Maharaja's College players played a planters' eleven at Chikmagalur. It failed to cover itself with glory. Some of the best men were unable to go, and since this defeat our cricketers in the Maharaja's College have been longing to show Chikmagalur their real mettle, and Chikmagalur has been nothing loath to be shown: some of the best and most hospitable sportsmen in the State are to be found there. A second visit, however, was found impossible; and this is the more to be regretted because one of the best cricket elevens we have ever had is being sadly broken up this year by unfortunate passes in the degree examinations. Mr. H. Krishna Rao, however, remains for ever, and so long as he is here to train, discipline and encourage, even the leanest year must produce something.

J. C. R.

We have not received reports from the various college societies but know that they have continued to flourish—the Philosophical, Kannada, and Sanskrit Associations—and have held a number of successful and valuable meetings.

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## MAHARANI'S COLLEGE.

WE take the following Maharani's College Notes from "The Maharani's Women's College Magazine,"—a most interesting annual consisting almost entirely of contributions from students of the college.—

I have a whole budget of college news, though this is but a short term and full of hard work. Many holidays happened to fall on our Association days, and thus deprived us of our legitimate meetings. With all that we have a good record of college activities.

Our Literary Club met twice. R. H. Campbell, Esq., I.C.S., C.I.E., very kindly gave us a most interesting "talk" on Kashmir, with Prof. J. C. Rollo, M.A., in the chair. Ourselves and a few friends formed the audience. The lecturer's description of Kashmir was so graphic that, as the chairman put it very appropriately, we were all seized with an eager desire "to go there," and that at once. He read us, much to our amusement, some of the verses that he had strung together during the trip. It was altogether a most happy experience, and in our vote of thanks we hoped that Mr. Campbell would be kind enough to look us up some future time, and give us another of his delightful talks.

We met again in January, when a second-year student, Ernestine Loenen, read a paper on Tennyson, which we all enjoyed much, as with most of us Tennyson is a favourite.

In connection with the Historical Society, Sri Amba Bai, of the Second Year B.A., read a paper on "Lessons of History." The meeting was presided over by Sri U. Abhayambal, M.A., and our Superintendent was also present. The paper was interesting, and the meeting closed with a speech from the chair.

Our Tennis is thriving. Many are now eager about the game. There is a distant prospect of our possessing a badminton court, and so we are all looking forward to the day when we may have a game of badminton in our own grounds. In the meantime we hope that all of us will learn to make use of the compendium of indoor games that we have got down recently.

Nearly at the end of the term, the Second Year B.A. class presented the scene of a gay little assembly, consisting of the members of our

tennis club and our professors, when our Superintendent was At Home to entertain the winners of last year's cups and to distribute the prizes to them—Sri Parvathamma and Sri Manjamma. The programme, though consisting of only three items, kept us all pleasantly occupied till late in the evening.

After refreshments we proceeded to the tennis court. At the refreshment table it was decided that the prize winners were to have the first set that evening. They were indeed lucky people, for they were honoured as the chosen partners of our professors.

The tennis court looked gay indeed, with all the students standing round watching eagerly the exciting game. Our indoor games had the rare opportunity of being brought outdoors, and, as it were by magic, in an instant the arrangement of the spectators was changed from rows of standing onlookers into little groups of players sitting around tables, deeply engrossed in Chess, Draughts, Halma, Ludo, Solitaire, and other games.

Everyone looked so enchantingly free and happy. It was such a delight to steal away from History, Economics and Politics and all their tedious labours and to breathe an atmosphere of tennis, perfect freedom, and "delightful ease." But before we actually realized that we were really playing games, nature, so "envious" and so hard upon us students, interfered with our pleasant hour, and darkness began to close in. The prizes were then distributed, the programme was brought to a close, and we had all to say good-bye to the Tennis Club Entertainment and hasten to battle with our books.

The prize winners will be disappointed if no special mention of their cups is made here. Parvathamma, the senior prize winner, has carried away to Bangalore a real trophy. Her cup looked like lotus petals closing in slightly to form a cup. The cup of the junior winner was a bit smaller, with a smooth round outer surface. They were both of good silver, and the winners no doubt are very proud of their cups, because they are the lasting memorials of their struggle, merit and perseverance.

The College Club was the most active of our societies, and we always look forward eagerly to our recreation evenings. In December, we all had a very happy evening when Mrs. Hensman took us to Lalitadri. After getting down from the bus on the hill-top we roamed about from place to place, examining all the interesting nooks and corners. We next had some jolly games, which were delightful in the fresh air of the

plateau. The view of Mysore from the hill after the city was lighted was indeed very beautiful. After enjoying ourselves to our heart's content, we all came back to our homes with hearts full of happy thoughts.

Two other club evenings were spent in the college itself. There were two games socials, at which we spent much time in many interesting games. All are very eagerly hoping to have many more such evenings.

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Our Kannada Debating Society met on the 7th December, 1921. The subject was "Are Varadakshina and Kanyashulka justifiable?" Two interesting papers were read—one by Sri B. Indiramma, of the Third Year B.A., and the other by K. V. Chennamma, of the Second Year Class. Both were insistent on abolishing the compulsory dowry system as it now exists in India. A hot discussion followed, in which many condemned the idea of taking money for the bride. After a well-balanced speech from Prof. B. Krishnappa, the chairman, the meeting came to a close with a unanimous vote against the compulsory dowry system.

\* \* \* \* \*

In December last we had the honour of a visit from Mrs. Campbell. Our Superintendent took her round the classes, the library and the reading rooms. All the students then assembled and thanked the visitor, after regaling her with a specimen of instrumental music. We were all so pleased at the visit, and longed for a holiday—but got none!

Mysore was anxiously looking forward to H. R. H. the Prince of Wales' visit. Mysore looked gay and beautiful with all its grandeur. One evening we were taken to Government House by Mrs. Hensman, and we felt a keen delight in wandering through all the rooms, admiring the arrangement of the rich furniture, its appropriate colouring and upholstering, and the extreme care and finish with which everything was done.

The 19th of January, 1922 lives in the memory of all the people of Mysore, especially the student population, being the day on which H.R.H. the Prince of Wales arrived here. The whole city looked gay with all its brilliant bunting, and the beautiful arches were a sight worth seeing. The bus, with its load of students, and bright banners floating above, reached our gallery. After half an hour of anxious waiting the heralds and the bodyguard made their appearance. With eager expectation we watched the approaching procession, the state coach bearing

His Royal Highness, His Highness the Maharaja and His Highness the Yuvaraja.

The Prince saluted the school children on either side as they clapped their hands. The procession slowly passed by, and all eyes were fixed on it till it was out of sight; and we said to ourselves what all the world said of him,—“He is a charming Prince indeed!”

Again, the 27th of January, 1922, was another day of importance to our college. Rajasevadhurina Sir M. Kantaraj Urs, K.C.I.E., C.S.I., the Dewan of Mysore, visited our college. Thus the year has been very lucky in our having visits from high personages.

We decided to close our year with a variety entertainment, so just before we closed for examination study, we fixed a day for it. H. H. the Third Princess of Mysore most graciously was pleased to honour us with her presence. In much trepidation and nervousness we prepared for it, for this was the first of its kind. Our sombre college hall was transformed, with a beautiful stage at one end, all the necessary curtains and paraphernalia being kindly lent to us by the proprietor of the leading theatrical company of Mysore. Flower-pots and ferns added to the beauty of the stage, and it was indeed a pleasing sight with its brilliant electric drops and footlights.

By 6-30 p.m. the hall was full to overflowing. One of the distinguished guests was Sri Rajakumari Lilavathi Ammaniyavaru, the daughter of our Dewan Sahib. Exactly five minutes after 6-30 p.m. Her Highness, accompanied by the Rajakumari, arrived, and as she walked down the hall the curtains lifted and revealed on the stage the assembled college girls with bouquets. A welcome song in Telugu, specially composed for Her Highness by a well-known musician of Masulipatam, was sung by the girls. At its finish bouquets were presented to Her Highness and the Rajakumaris. A choice programme of English and Indian music and recitations was gone through successfully. Two of the most enjoyable items of music were the solos on the violin and violincello played by Reverend Father Despatures of Mysore, who had to play behind the curtain as the affair was purdah. The Portia and Brutus scene was extremely well done by two students, their dress being picturesque and appropriate. Four tableaux were staged.—Damayanti conversing with the swan in her pleasure garden was voted the best by many. Sakuntala and her maidens in the forest, all dressed in yellow *kavi* and supposed to be performing the various duties of the hermitage, was indeed a pretty scene. Sita trying to induce the Maya



deer formed another beautiful picture, while the last one was the Raksha ceremony of Krishna. A large doll, bejewelled and bepearled, formed the centre of attraction for a group of richly dressed Indian ladies, who with their offerings of flowers and fruits and playthings stood admiring the baby, while one graceful lady charmed away the effects of the evil eye. It was a real scene out of Indian life, and was indeed a fitting conclusion to the entertainment. The shifting coloured lights added mightily to the effect of the tableaux. The singing of the Mysore and British National Anthems was the signal for dispersal. Her Highness, with her usual kindness, graciously declared herself well pleased and addressed a few cheering words to the college girls who had assembled round her car, which left amid hearty cheers and enthusiastic clappings.

Thus we said goodbye to one another till next term.

#### ENGINEERING COLLEGE.

THERE are many events to record about the College since I wrote last. First and foremost, and at the same time saddest, is the most deplorable and untimely demise of our beloved Professor S. Raghavendra Rao, B.A., A.C.E., B.Sc., M.I., in the month of April. His sense of duty was so keen that he started with a fever of 103 degrees from his native place, Trichinopoly, for Bangalore, on account of urgent university examination work, by the noon train in the suffocating heat; and he succumbed in the train near Karur station. No better tribute can be paid to his memory than stating that the University will find it very difficult indeed to get a suitable successor in his place. May his soul rest in peace.

The next event to record is the *College Day*, which came off early in March. It was indeed an unalloyed success, and credit is due to the fact that the items of work were distributed to several professors for getting through, which left the secretaries in charge little more work than general supervision. Mr. Justice Chandrasekhara Iyer's address was really superb both as regards delivery and thought, and so was the lecture by Dr. Fowler of the Tata Institute.

As regards minor events, the students of the 3rd year Civil and Mechanical classes were taken on an inspection tour to Marikanve-Benkipur and Baitamangula-Madras respectively. The parties were accompanied by myself and Mr. S. Raghavendra Rao respectively. It is too late in the day to labour the points of justification for such tours, especially in the case of technical courses of studies. The practical training and

the visiting of various engineering works is more important than abstract theories in the class-room, and this aspect of the training requires further encouragement.

The College sports were more lively this year. There were tennis tournaments in singles, and inter-class matches both in hockey and football. Though encouragement was given by the Sports Committee which has been recently formed, by awarding suitable prizes to the winners in each item, still the sports require further encouragement and organisation on a sounder basis.

K. D. JOSHI.

## SCIENCE NOTES.

COMPILED BY MR. B. VENKATANARANAPPA, M A.

*Parasitic worms of man and methods of suppressing them.*—Major F. H. Stewart of the Indian Medical Service (retired), in an article in a recent issue of *Nature*, gives the following very useful information :—

The more important parasitic worms attacking human beings can be grouped as follows :—(1) the intestinal worms, such as the *roundworm* and the *hookworms*, (2) the *trematodes* or *flukeworms*, and (3) the *filarias* and their allies, which live in the connective tissue.

The roundworm and the hookworms live in the small intestine of man. The former is an animal of considerable size, from above three-fourths of an inch to nearly one and a half inches in length, while the latter two are smaller, about half an inch long. The sexes are separate in all of them, and the females pour out a stream of eggs which are passed out of the human body in the faeces. The eggs ultimately find their way to the surface of the soil and if the conditions are favourable—i.e., if the ground be moist and the temperature not low, the little needle shaped hookworm larvæ hatch and lead a free life in mud or in small puddles or pools. Should the hands or unshod feet of man come into contact with them, they are roused to great activity. They bore their way through the skin into the sub-cutaneous tissue and are carried on by the blood through the heart to the lungs, and from there through the air-passages to the gullet and thence to the small intestine.

In the case of the roundworm the egg must be swallowed before it will hatch and this accident takes place through the consumption of vegetables grown on infected soil on which the eggs have been splashed, or as the result of eating with unwashed hands after working on contaminated land. The egg hatches in the small intestine and the larva bores into the wall of the bowel, enters a vein and passing through the liver and heart in the blood stream reaches the lungs and from the lungs it migrates into the intestines by a route similar to that adopted by the hookworm.

In the hookworm one object of the migration is obvious, since the larva is merely taking the most sure and direct route to its goal. It must however be remembered that only a few of all the larvæ which have hatched ever succeed in finding men, while only a few of the eggs

reach such favourable surroundings as allow the larvæ to form or to hatch. A second object is that, as the young larva is not adapted to survive among the strong digestive juices, its cuticle and constitutional resistance are developed during the migration, while the larva is being nursed by the blood and lymph, by the bland and nourishing juices of its host.

In geographical distribution the roundworm is cosmopolitan, occurring in all lands, both temperate and tropical. The hookworms are also very widely distributed, being absent only from the colder parts of the temperate zones, and even there they occur sporadically in artificially warm situations. The proportion of the population affected, especially in the tropics, is extraordinarily high, from 40 to 98 per cent having been recorded in various countries from the examination of large numbers of the populacc. The degree of infestation is highest in the Far East. It is also shown that it is not only among dark skinned races that the parasites become very numerous. Even in Europe 20 per cent of the adult population of Italy and one half of the children of Central Europe carry the roundworm.

The *flukes* are flattened oval worms which live in the veins of the abdomen (*bilharzia*), in the bile ducts (*clonorchis*) and gall-bladder and in the tissues of the lungs (*paragonimus*). Bilharzia occurs over large areas of the tropics and sub-tropics. In Egypt more than one half of the population is affected by bilharzia. The other two are limited to the Far East.

The life histories of all the flukes are similar. The eggs are passed out with fæces, and if they reach water the embryos which they contain emerge and swim about actively in search of some particular small mollusc (the intermediate host) into which they must penetrate in order to undergo their first metamorphosis; for bilharzia this host is a small water-snail. From the snail the bilharzia escapes as a more advanced free swimming larva which can bore through the skin of man should he venture into infected waters, and once within the body it migrates through the tissues to the veins of the liver and abdomen.

The other two parasites have two intermediate hosts, in the second of which they remain passive until they are swallowed by man in food.

The *filarias* are long, threadlike worms which live in the connective tissues of various regions of the body. They are associated with the disease known as *elephantiasis*. Geographically they are spread throughout the whole of the tropics. The larvæ circulate in the blood in enormous numbers, and are taken by blood-sucking insects in which they grow in size. After the lapse of several days they wander into

the proboscis, from which they are injected into the skin of man when the infected insect again feeds.

The *guinea-worm* is common in India, Turkestan, Persia, Arabia and tropical Africa. It lives under the skin, and when mature gives rise to a small ulcer, generally on the leg or foot, from which one end of the worm projects. A stream of larvæ is discharged through this ulcer into water when the patient bathes. The next stage of its life is passed in a water flea, and it is by drinking water containing these minute animals that man is infected.

Apart from local disease, such as abscesses, elephantoid swellings, etc., the more important parasitic worms produce generalized disease of a very important nature which is surprisingly uniform whatever be the causal animal. The primary symptom is always anæmia and the secondary symptoms are such as accompanying this condition, *viz.*, general weakness, inability for work or any exertion, disturbance of the heart and circulation, and finally dropsy and death. In mild cases, which fortunately are the more common, the anæmia is not great and the patient is merely reduced to a lower level of activity, happiness and efficiency. But when we consider the enormous prevalence of these pests, we can realize the extent of the harm inflicted on mankind by them. It must be remembered that in most tropical countries the people live only just above starvation level, and that any additional burden will quickly depress them below it.

Our armament of offence and defence against these enemies is at present incomplete, but it is becoming more effective. Offensive measures consist in attacking the parasites directly in the bodies of their human hosts, and the main advances have been in the use of *oil of chenopodium* against the roundworm and hookworms, and the intravenous injection of *tartrate of antimony* against bilharzia. The former drug can be used on an enormous scale with great safety and efficiency, and if the inhabitants of a badly infected country can be educated to the point of undergoing treatment *en masse* once a year a great reduction of disease should result.

For defensive measures reliance is placed on improvements in sanitation and in the personal cleanliness of the people, advances which will necessarily be slow. No practical means of destroying eggs or larvæ on a large scale in the outer world have yet been discovered. Where an intermediate host exists a reduction of the disease would follow wholesale destruction of, or protection against, the intermediate. In this connection mosquito destruction has, of course, already been carried out on a large scale in antimalaria work in many regions, and

it may be extended with the additional object of fighting worm disease. For the destruction of the snails associated with fluke disease, periodical drying of canals and irrigated fields has been advocated.

Three things, above all, are necessary for the conquest of these plagues :—(1) Continued and intensified research into the many points of the intricate life-histories of these parasites and their intermediate hosts which are still obscure; into new methods of destruction, chemical and physical of both these groups of animals, whether as eggs, larvæ or adults; and into new methods of medical treatment for infected men. (2) Systematic instruction and tactful control of the peoples affected. This will be the duty of the medical and teaching professions of the stricken countries. Any one who has watched the increase of well-taught and capable physicians in such a country as India during the last 20 years will base great hopes on the growth of this influence. (3) And most important, a common and indignant consciousness that these plagues are not inevitable, that by combined effort they can be cast off, and that it is a disgrace to humanity that one half of its members should be harbouring these loathsome pests.

NATURE.

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*Facial reconstruction.*—At the eleventh annual congress of the American College of Surgeons, Dr. Blair pointed out that larger facial defects were created by cancer operations than by battle casualties, on the average. He predicted that the results achieved in this line are opening up a new field of surgery.

"The most important part of any surgical procedure is a plan," said Dr. Blair, "and the more closely and intimately this plan fits the needs of the case, the better will be the results. In reconstruction of the face, the plan should be as accurate and comprehensive as those used by the oculist, the dentist or the journeyman tailor. In the creation of the plan we should mimic the methods of the sculptor and tailor who materialize their conceptions in clay or chalk before attacking the marble or cloth.

"If reconstruction surgery of the face should continue to develop along the lines upon which it is well started, I can see no reason why in the majority of cases a really good surgeon, given a healthy patient, the feeling of an artist, the skill of an ordinary tailor and the tenacity of a rat terrier, could not produce in flesh and bone, features that compare favourably with those created by the accepted sculptor or painter. But it will require special skill and training and no end of hard work.

"Until such men are trained to work in this line the result must

continue to be archaic and not incomparable to the results that would follow if each man were forced to make his own clothes. Satisfaction at one's appearance has a tremendous bearing on poise and self-confidence, and, disregarding battle casualties, skill in the correction of facial defects will open up a very substantial field of legislation and much-needed surgery.

"If a man, through being wounded or an accident, has lost his nose, we first make a clay cast of the face without the missing feature. This negative is then filled with plaster and a positive cast made. On this the artist works, developing the missing feature according to the best æsthetic rules. When this is completed, we have the patient's face with the built up new features in plaster. The added feature is then covered with tin foil and a pattern is made, when the foil is flattened out. From this pattern we cut the cartilage, with which we build up the new feature, from the patient's body, cut it into shape and apply it to the old wound. Then a piece of adjacent skin is cut to the size covering the newly built feature, and is left joined like a flap in its old position until it begins to graft on the new structure, after which it is cut away."

SCIENTIFIC AMERICAN.

*The fixation of atmospheric nitrogen.*—The fixation of atmospheric nitrogen is based on the scientific discovery of Cavendish, as early as 1784, that nitrogen can be made to combine with oxygen, by exposing both gases to an electric discharge. This reaction was investigated later more completely by Lord Rayleigh in 1897, and the industrial manufacture of nitric acid by this means was first undertaken by McDougal and Howles at Manchester in 1900.

The stimulus which has, in recent years, been given to this enterprise was created by the realisation that the world's supplies of nitrates, which have resided hitherto mainly in the saltpetre beds of Chile, are within a measurable distance of exhaustion. Moreover, the experience of the recent war has emphasised the disadvantages of fetching from so great a distance the material which forms the primary requirement of agriculture and of all explosives. There is, however, a source nearer home. The air over a single square mile of the earth's surface is estimated to contain about 20 million tons of nitrogen, which is approximately equivalent to thirty times the quantity of combined nitrogen contained in the world's production for the year 1913 of Chile nitrate and ammonium sulphate, an alternative source. The conversion of this free nitrogen into the nitrogen compounds so sorely needed in the arts

of peace is therefore a most important chemical and engineering problem.

One of the main processes for accomplishing the artificial production of nitrates consists in subjecting air to an electrical discharge or so-called high tension arc. By this means, the nitrogen and oxygen are induced to combine, giving a compound which in contact with more air reacts with water to give nitric acid. The addition of lime and ammonia then give respectively calcium nitrate, which can be applied as a fertiliser, and ammonium nitrate, which forms the basis of explosives.

The electric arcs used in chemical processes are of two distinct types, the high-tension arc and the low-tension one. The former is identical with a miniature lightning discharge continuously maintained, and is produced by a small quantity or volume of electricity at a very high potential or pressure, while the latter is obtained by the passage of a large current at low potential between two adjacent poles or electrodes, which are thus raised to their volatilization temperature and yield the vapour needed to conduct the current.

In one of the main types of apparatus employed in Norway for effecting the union of nitrogen and oxygen, a current of air is drawn through a narrow drum shaped enclosure in the centre of which a high tension arc is formed between hollow copper tubes through which water circulates. By means of a magnetic force, which is applied on the outside of the arc, a discharge is caused to spread out in the form of a large fan and fill the space traversed by the air, which emerges with a large content of oxides of nitrogen. In one of the installations forty-five of these furnaces are in operation, and each furnace consumes electric energy at the rate of 4,000 horse-power.

In another type, the air is passed, at a high velocity, up vertical towers, and the high tension arc is adjusted to extend in rod form axially through the centre of each tube for a distance of 25 feet. Each of these units consumes 1,300 horse-power.

The oxides of nitrogen, in all processes, are conducted to a separate building, where they are passed up a series of towers 100 feet high, containing pieces of quartz, down which water percolates. Nitric acid is thus formed, and later converted into nitrates as required.

The factories in Norway are situated at Rjukan, a somewhat isolated district possessing abundant water power which furnishes all the energy required. The supply of water is there derived from Lake Mosvand, 3,000 feet above sea-level. From there the water is led for about three miles through a tunnel in the rock, to a distributing basin or reservoir excavated from the rock, and thence down ten steel pipes 4 to 7 feet



wide through a fall in level of 940 feet, to the turbines at the base. Each turbine generates 14,500 horse-power, so that altogether 145,000 horse-power is generated. After issuing from this power station, the water is again utilized through being led, in a similar manner, to a second station about 1,000 feet lower down, where a further 162,000 horse-power is developed.

The output of the Norwegian factories, after 1916, exceeded 50,000 tons of ammonium nitrate annually.

#### DISCOVERY.

*Soil acidity.*—Soil acidity or “sourness,” to use the farmer’s phrase, has attracted attention from very early times. The use of lime as oxide, hydroxide, or carbonate (as chalk, limestone, or marl) in correcting soil acidity, or adjusting soil reaction, is among the oldest of agricultural operations; while of late years the study of soil acidity has occupied an important place in agricultural research. It cannot be said, however, that the enormous amount of work done has either solved the practical problem involved or clarified our ideas as to what exactly soil acidity is.

Some soils are apparently so acid that when moist they will redden litmus paper almost immediately, but their aqueous extracts seldom redden litmus after boiling off the carbonic acid gas ( $\text{CO}_2$ ). The comparatively few cases reported in which the  $\text{CO}_2$  free aqueous extracts were acid to litmus have invariably been the result of highly abnormal conditions.

Various theories have been put forward at different times to explain this acidity, but none of them seems satisfactory. Whatever the cause or causes, it is difficult to avoid the conclusion that a certain degree of real acidity is present which should be capable of measurement. Many methods have been proposed at various times; but all these give different results: the degree of acidity measured by some may be anything up to 10 or 20 times that obtained by others.

Evidently more factors than mere acidity seem to be involved here; the absence or deficiency of certain bases from the soil brings about a condition of infertility that cannot be accounted for as being due directly only to a definite degree of acidity of the nutrient soil solution. Such a condition of infertility is remedied by a dressing of lime. But for the complete removal of this condition an amount of lime is added in excess of that required for neutralisation purposes, and it is generally assumed that this excess of lime is necessary in order to neutralise any acidity that may develop subsequently. It must be emphasised, however, that

this excess of free lime probably has certain beneficial effects on the soil in addition to its effect on the reaction, and it would appear that the presence of a free base, or rather an available base, is of considerable importance in maintaining soil fertility.

The presence of an excess of free lime appears to have a good effect on the physical condition of heavy soil due to the flocculating action of calcium carbonate or of calcium hydroxide. This effect indirectly influences the regulation of the air and moisture supplies, which in their turn affect the conditions underlying the biological and chemical relationships: both nitrification and nitrogen-fixation are promoted, the rate of oxidation of organic matter is increased, and it is supposed by some that possibly a precipitation of harmful toxic substances may occur, especially salts of copper and zinc and the heavy metals when these are present. It has been stated that an acid condition will bring about a decreased availability of phosphates due to (1) the formation of the less soluble ferric and aluminium phosphates from the more soluble calcium phosphates, and (2) the formation of complex phosphorus compounds with acidic organic matter, which have a very slow rate of decomposition under acid conditions.

These considerations bring out more or less clearly how the *general fertility of the soil* is affected by an acid condition on the one hand and by an excess of lime on the other. There are, however, many other far-reaching effects of soil acidity on the general inter-relationships comprised within the soil plant economy. Considerations of these bring out the importance of distinguishing clearly between the "acidity" of a soil and its lime requirements. The latter is a more comprehensive term than the former, and has a larger value in terms of lime per acre.

There may, in certain cases, be danger of over-liming when calcium oxide or hydroxide is the form employed. Cases have frequently been recorded of addition of lime to soils retarding the growth of such crops as oats or wheat when grown *immediately* after the liming. This is apparently due to temporary conditions which soon disappear, when the lime will benefit these crops as well as other subsequent ones.

Soil acidity is generally regarded as a pathological condition of the soil which may and should, be removed by liming. This is not universally the case, however. In potato growing in particular, an acid condition of the soil is beneficial, and is, in fact, generally preferred, because a certain degree of acidity is not only not injurious to the potato crop, but is inimical to the organism causing soft scab—one of the worst of potato pests. This disease, however, never appears on a soil of a certain degree of acidity.

## THE SENATE MEETING.

THE Senate met on Friday, March 31. The Vice-Chancellor was unable to attend, and Mr. C. Srikanteswara Iyer was voted to the chair. There is little to record or comment on: practically the whole time of the meeting was spent upon the budget, in an honest and desperate attempt to cut down expenditure in correspondence with general retrenchment. The professors were firmly supported by the rest of the Senate in their opposition to any reduction in the number of tutors in the colleges. Government has, notwithstanding, considerably reduced the number, and it would be absurd to complain in view of the situation described in the Dewan's speech to the Representative Assembly. But the reduction means, definitely, an injury to university work, and one hopes that one of the first things to follow financial improvement will be the restoration of the tutors.

Several topics were touched on in the discussion "in committee" which are bound to become the subjects of motions in the near future. The abolition of the Maharani's College was in the minds of a number of members, nor were there wanting those who would abolish the College of Engineering also. The agenda contained a definite motion for the former abolition, but the meeting did not get so far down the list. The question is sure to come up in the autumn, and it will be as well to get it threshed out once for all.

Another discussion which is sure to arise—the first mutterings of it were heard at this meeting—is on the question of raising university fees. It is to be feared that there will be some bitterness in this debate, for ideals are concerned. Wise decision will be most difficult to reach, so complex are the circumstances. Every one is aware that in all parts of the world the fees for education have lately been raised very considerably because of the greater expensiveness (as regards salaries and other outlay) of imparting education. In England (it was remarked at the meeting) the increase is about 40 per cent. It is very natural to ask why the same procedure is not adopted in Mysore, where, even in pre-war days, the fees were well-nigh unique in their smallness. It will probably be replied that in England, and in other foreign countries, the incomes of parents have correspondingly increased, and thus things are as they were before, while in Mysore there has been no such increase, and the extra fee is simply an extra tax on the student or his guardian. It is an important argument, and the present writer has not the infor-

mation necessary for discussion of the facts. But suppose them granted, there remains the fact that education has advanced throughout the world (which includes Mysore) in cost of production, and ought to be charged more for, irrespective of difficulty of payment. Here however, comes in the question of principle, of ideal. A considerable number of members of the Senate hold it as a principle that university education should be free. The grounds of this principle are difficult to discern. It is contrary to world-wide practice, and we have attempted to show, before, that it is essentially false doctrine. Many, however, sincerely cleave to it, and believe that eventually it will be adopted in Mysore ; and such "retrogression" as the increase of fees rouses within them the passionate wrath of the thwarted idealist. In all discussion this view is to be respected, and opponents must be scrupulously fair to it. Unfortunately, its disciples are themselves sometimes rather unfair. For example, it was remarked by one member of the Senate, at this meeting, that the professors seemed anxious rather about raising their own salaries than about the interests of the students. The simple implication was that professors should be mildly content with a reduction of salary (for the meeting of post-war conditions on pre-war salaries amounts to something like a fifty per cent reduction) in order that those whom they serve may benefit. This would be a very curious theory to apply to other branches of public service, or to the private professions. The teacher may be in some sense a devotee, and probably to the end of time he will gladly give more than he is paid for, but he is neither missionary nor monk, and the sooner this idea is got rid of the better. Yet all can sympathise with the poverty of student and of parent, and can wish that the essential cost of education (which includes the payment of adequate salaries) might be met without imposing a greater strain upon the impoverished individual. A number of scholarships are actually given each year *by the members of the staff* of the Maharaja's College ; and they view the plight of the student with a much more practical sympathy than do the public. Their own financial claims, however, cannot be disregarded ; and it is not the professoriate in particular, but the whole world, that conceives that such expenditure is most naturally met by charging for education that which it is worth.

One regrettable necessity of the times was the postponement of the institution of the M.A. degree in Persian because of disproportion of expenditure to the probable number of students. This is not a principle. The institution of such a degree is equally desirable be the number of students one or fifty. The delay is a matter of exigency : there are many prior claims.

J. C. ROLLO.



# THE MYSORE UNIVERSITY MAGAZINE

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## EDITORIAL

THE MADRAS UNIVERSITY AND REFORM—The Senate of the Madras University has denied its support to the reform bill drafted by the Minister of Education. Not disapproving of the bill in itself, but passing a resolution in its favour, it has inserted an amendment which means the indefinite postponement—practically the destruction—of the measure. The majority for the amendment was small—27 to 24—but it will be difficult for the Minister to proceed with a bill that is not accepted by the academic body, particularly when the opposition has been led by some of the ablest, most experienced and most disinterested members of the Senate. We believe that the bill is dead; that its death delays genuine progress; and that this delay in progress is a necessity. Even from the newspaper report it is clear that the discussion was one of the most interesting ever heard in the Senate House. Probably there has seldom been a problem on which the average senator found it more difficult to make up his mind. There was an unwonted cross-division of opinions, and men usually firm allies found themselves in opposing camps. Also there was an unusual intensity of feeling in the matter—some speakers being animated by a long dreamt of ideal and hating the idea of further delay, and others presaging the practical destruction of their life-work, of the colleges they had made, should the ideal be grasped too soon. In the end it was by no means the force of reaction but broad common sense that won the day.

The bill sought to establish—immediately—a “teaching university” in the city of Madras. Certain Madras colleges were to be constituent colleges, and those outside were to be “affiliated” till such time as new teaching universities should be established in various important centres throughout the Presidency. The eventual creation of a number of teaching universities was contemplated—eventual because, no doubt, both the smallness of available funds and in some cases the insufficient development of the colleges already existing made it impossible for the moment to establish universities in mofussil centres. Here is a situation most interesting to us in Mysore. When Mysore broke away from the Madras University and made a teaching university of its own, Madras did not like it, and a number of first rate judges even in the State thought that a serious mistake was being made. In those days—only five years ago—Madras opinion was against any bifurcation; it scouted the idea of separate universities whether upon a linguistic or upon a local basis. During these five years there have been many decisive changes of view, and among them is the acceptance of the idea of a plurality of universities. Even Madras opinion would now justify our separation. But it is not relevant to Madras’s own practical problem. The separation of Mysore was easy, partly because of the exceptional development already attained by our colleges, and chiefly because the creation and support of the new university was the care of the Government of Mysore. Days of retrenchment are awkward enough, but in no circumstances can Mysore University finance cause such anxiety as would arise, for example, in Trichinopoly or Madura, where at present very little government help could be counted on. Such centres cannot yet have universities of their own. So far as they are concerned the system of affiliation to a central institution must for many years continue. The supporters of the bill, however, holding that—as is urged in the Report of the Calcutta University Commission—the teaching university represents an immense advance upon the affiliation type, believe that a beginning can now be made in Madras, that it ought to be made, and that, while this would affect somewhat the position of affiliated colleges outside the city, their interests can be guarded. On this rock opinion splits. The representatives of these mofussil colleges believe—apparently to a man—that to their colleges the step would be fatal. The establishment now of a teaching university in Madras would not be the first step towards the conversion, or amalgamation, of local mofussil colleges into other universities, but rather would mean such impoverishment (financial and intellectual) of their colleges that they would tend away from rather than towards development into such

universities. They asked, therefore, that the establishment of a teaching and residential university in Madras should be delayed until similar universities could be established in other centres; and they won the day so far as the Senate is concerned.

They are the best judges. They know exactly how their own colleges would be affected by the isolated change in Madras. They know that even now students from their own centres flock to Madras, desiring admission to the Presidency College or the Christian College, partly because they have a traditional (and of course well-grounded) belief in these colleges, and also very largely because they want to be in the colleges whence examiners are chiefly drawn. A considerable proportion of the mofussil colleges, even now, have to be content with the leavings of the metropolis, and with such local men as put up with them because they cannot afford to go to Madras. They apprehend, and justly, that matters would become much worse were the Madras colleges now to be officially distinguished from theirs by being made constituent colleges, and were all the privileges of a residential and teaching university to be extended to the students who go to Madras. These very phrases, of course, make one hesitate: "the privileges of a residential and teaching university"—ought these to be denied to students that certain colleges may be conserved? We believe that this temporary denial would be right. It is to be remembered what these mofussil colleges have done for students in the past, at what sacrifice they have been maintained, how steadily they have progressed in efficiency. In Trichinopoly at any rate the development of St. Joseph's College and the S. P. G. College is such that the creation of a university there would present little difficulty other than financial. And it is not as if Madras students would suffer acutely by the delay. The affiliation system is inferior, but is not to be despised, and the Madras University has brought it well-nigh to perfection. Further, in Madras the virtues of both the "teaching" and the "residential" elements in the new scheme are already present in considerable degree. A student of the Christian College who lives in the hostel near by or a student of the Presidency College who lives in the neighbouring Victoria Hostel has very little to gain by the change. This change is good, is inevitable, but the need for it is not acute; and delay would mean the saving of great and serviceable institutions outside the city.

Two admissions, however, must be made. First, presuming that four residential and teaching universities be started simultaneously (as was recommended by the Senate two years ago), that of Madras city is likely to possess a certain superior prestige: the mofussil universities



can *never* have the same number of first-rate students as will choose the metropolitan university. Second, there are a large number of mofussil colleges in places which cannot conceivably become university centres, and they must remain affiliated colleges till the end of time—or cease to be colleges at all. These disabilities will always remain. But these admissions do not really affect the argument. Those mofussil colleges which ought eventually to become universities will be injured, their development retarded, their good work nullified, their becoming universities delayed, by the proposed measure; and the gain to the Presidency is not commensurate with the loss.

**SELECTION COMMITTEES.**—Some months ago the Madras Ministry of Education appointed lay committees to assist the principals of the various government colleges in their annual task of admitting students. This step appears to have been consequent upon a resolution of the Legislative Council that 50 per cent of the students admitted to government colleges should be non-Brahmins. Very great dissatisfaction was created among Madras educationists by the formation of these committees, and at the recent meeting of the Senate of the Madras University there was a long debate on the subject. The motion—that the Senate should record its disapproval—was withdrawn, for the general view seems to have been that Government was well within its rights in thus legislating for its own colleges, and that criticism in the form of a resolution of the Senate would be unwarranted. At the same time, so far as we can gather, it was generally considered that a mistake had been made, and that the required proportion of non-Brahmin admissions should have been secured by other methods than that of interfering with the indubitable rights of the principals. There was point in the remark of Mr. L. C. Hodgson “that if selection committees were good for assisting principals of colleges in admitting pupils, similar committees might be appointed to advise the Lord Bishop of Madras in the selection of his sermons, or to advise the Surgeon-General as to how operations should be performed.”—Most people will agree that the Madras senators both voted and thought rightly. The Senate was right to avoid conflict with the Ministry of Education. But we believe the general idea was right also, that the principals should have been left alone. They and they only are competent and experienced judges of the individual’s qualifications for admission. Fifty per cent of the admitted students must be non-Brahmins; that is deemed good or evil according to one’s caste and political party. In any case the rule had to be carried out. Why not leave it to the principals? Instructions were

all that was required. The Director of Public Instruction remarked that committees were better than instructions, because the former could frame their own rules and see that these were sufficiently elastic. This defence is hard to understand. The principals would be much more likely than the committees to secure the right sort of elasticity. We assume the absolute impartiality of the principals, and the faithful carrying out by each of them of the Legislative Council's resolution. Surely this is a fair assumption.

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THE COMMERCE FACULTY.—The *Bangalore Daily Post* has lately printed a number of letters complaining about the "starving," followed by the abolition, of our Commerce faculty. With reference to this matter in itself, and not as an example of the general viciousness of the University, the case is certainly a melancholy one. It is humiliating to stop what has been started, and it is tragic when the thing started is so good as the Commerce course. Professor Shah gave it the best possible start. He turned out first-rate men, and they remember him with extraordinary gratitude and affection. When he went away the problem of carrying on the work was a difficult one. There are very few men possessing at once Mr. Shah's abilities, his qualifications, his experience and his "way with students." Further, financial matters had come to such a pass that such a man, if found, could not be paid for. Retrenchment had begun, and it was apparently considered impossible to spend so much money upon a course chosen by so few students. But University and Government did the best they could. Good men were employed; and the Principal of the Maharaja's College threw himself into this work with a devotion which seems but ill-appreciated by the sort of student that writes to the papers. Thus, while it cannot be denied that the employment of a "professor of commerce" would have been beneficial, the best that could be done was done, and "starving the course" is a nonsensical phrase. As for the abolition of the course, this is a most regrettable step, but does anyone realise its regrettableness more than those who took it, and had to take it? The Commerce faculty was of great value. It would, in time, have meant much to the State, in which the systematisation of commercial transactions and the development of an enlightened commercial spirit among its traders is very desirable. Needless to say, there are Mysore merchants who have nothing to learn in these matters; but we all know how much slackness there is among others—a slackness which becomes ludicrous in the details of shopkeeping. There are shopkeepers in Mysore who seem to rent shops as a diversion, whose hours

of business are an ever-varying puzzle, whose promises are wholly speculative, and who chiefly love journeys to Bangalore and Madras. The connection between their doings and the Commerce faculty is perhaps a little remote, but when commerce is being developed in an agricultural and leisurely country, the merchant is apt to forget that his activities are not seasonal, and that a complete change of method and attitude is necessary. The diffusion of our commerce graduates was going to be most beneficial to the State. Their capacity for good has been apparent at college. There is a very noticeable distinction of type between the Arts man and the Commerce man, a distinction which is largely the product of the courses. Each type has its virtues, and conspicuous in the Commerce men whom we have known has been the practical judgment and the faculty for handling affairs. They have taken naturally to their work, and become eager, quick and expert in it; and their alertness distinguishes them. It is agreed, then, that the abolition of the course is greatly to be mourned. But what is the use of mourning, and writing letters of lamentation to the papers, and making all sorts of absurd accusations? There are some people to whom it is impossible to face a loss. They cannot balance one loss against another, and do not understand what "necessity" means. The voices of such people are heard all around us at present, loudly complaining against the various losses due to retrenchment; and one would think, to listen to them, that Government loved retrenchment for its own sake, took a savage joy in putting a stop to good things, and, on the whole, never enjoyed itself better than now. Surely every citizen ought, at present, to put himself in Government's place. When money is lacking how can it be spent? When money is lacking to pay for all good things, the lesser or least urgent good things must go. It is all a matter of comparison, and Government has judged that, by comparison, the Commerce course must be suspended. It is foolish to complain, as these complainers do, without the slightest consideration of the general problem.

Another point is this: blame is laid upon the University, whereas the action is that of Government. The abolition of the Commerce course has not been laid before the Senate. What verdict the Senate would have given we have no idea, but it certainly has no responsibility in the matter. In certain other matters of retrenchment Government has gone against the recommendations of the Senate. Our present task is to make the best of things, realising the difficulties of the situation.

UNIVERSITY HOSTELS.—We have much respect for the *Indian Social Reformer's* views on educational matters, but for once we differ when

the *Reformer* opposes the formation of residential universities in India. There may, perhaps, be a little political bias in the matter. The attempt in Madras is being made by a non-Brahmin ministry, and the *Reformer* permits itself to say that the ministers should not meddle with the educational system "until at least they are sure that their diarchic souls are really their own." But this matters little, for the paper does consistently seek to consider educational matters on their merits, and its profession "we do not believe in educational propaganda by political parties" corresponds with its own practice. Whether it would uphold hostel life upon an indigenous system we are not sure; but at any rate it frankly disbelieves in the present hostel system (as found in Madras), and in any such residential system as is contemplated in the new Madras University bill. The *Reformer* believes that not good but positive harm is done the student by hostel residence, particularly if he comes of a poor family. He becomes conceited, meanly ambitious, contemptuous of his home. A ridiculous letter is quoted in which an honours graduate who has spent his college days in a hostel requests the editor of the *Reformer* to find him a bride who shall match himself in "beauty" and bring him plenty of cash. The folly of this young fellow is deemed the creation of his hostel, which thus becomes the destroyer of modesty, of decency, of common sense, of all virtue, and the perpetuator of all that is bad in old social custom. It is apparently assumed that the young man would have turned out much better had he lived at home. (How he would have fared in lodgings, if his home is not in Madras, seems a further question.) And all the stress is laid upon the evil which he is thought to have sucked out of the hostel life: the good is ignored, or disbelieved in. The whole thing is strange logic, and stranger psychology.

In the first place, can the *Reformer*, or can anyone, suggest that hostel life is worse than life in lodgings? We think not. Now, the majority of the students of Madras come from the mofussil, and must live either in lodgings or in a hostel. But we confine ourselves to the *Reformer's* crucial contrast between home life and hostel life, and say that for the student, whether in or out of India, the latter is far better—so much better that even were his home in the University town it would be better for him, body, mind and spirit, to leave his home for the period of his college life, and become the citizen of a hostel. The *Bombay Samachar*, replying to the *Reformer*, laid stress upon the disadvantages of the home life of the poor in our great cities. "In Calcutta, Madras and Bombay true family life does not exist for the middle class and the poor. The problem of the educationist in these cities is

more to save the student from the vitiated atmosphere of his home.—degraded, commercial, money-seeking, irreligious and unconventional—than to keep him in it.” The *Samachar* then adds some not very pleasing details. The *Reformer* retorts,—“Would our contemporary say that a student who lives with his people even in Bombay is in a worse atmosphere than one who puts up in a hostel?” We at all events would answer that at the student stage of life, hostel life will do far more for him than life in his home. The *Samachar* seems to exaggerate somewhat the evils of the surroundings of the poorer city homes. We would justify the hostel on other grounds.

The disadvantages mentioned by the *Reformer* are imaginary. A contemptible, mean-spirited fellow may, when he exchanges a poor home for the comfort of a hostel and mixes there with people of a higher social standing than his own people, begin to despise home and relatives. Is that the hostel's fault? Is it England's fault that the student who goes there occasionally comes back with a despicable contempt for Indian things and people? The good man is enormously benefited by his studies and experiences in England, which not only equip him and broaden his view but deepen his virtues, making him not merely a bigger man but a better Indian than before. Should the system of foreign study be done away with because it brings out, as any environment would bring out, though in a different way, the contemptible man's poverty of spirit? And indeed hostel life is much more likely to cure than to confirm meanness. Hostel society is not a priggish or a snobbish society, but one in which all sorts of people meet, rub the corners off each other, reduce each other to their proper places. It is a very sorry soul that emerges from that discipline with added self-conceit. Even acknowledged leaders are faithfully dealt with by their hostel friends. This constant association, in talk and contest and all the affairs of daily life, with a large number of fellow students of many different kinds—

“the help and the contest, the working whence grew

Such result as, from seething grape-bundles, the  
spirit strained true”

—this is the chief gift of hostel life. The hostel, in fact, provides the necessary complement of the life in the lecture-room. Its discussions, both organised and casual, broaden views, modify crude opinions, and exercise the understanding; while hostel relationships effect social and racial adjustments which are perhaps more potent than any other factors in the process of social reform.

Of very great importance, also, is the physical side of hostel life.

This is a matter of good food, healthy surroundings, regularity of life, medical supervision and inspection, and sports and games. Many an old-fashioned parent ignores the physical development of his son. It is good to get away from such parents into a hostel ; nor can even the most enlightened home furnish nearly the same advantages as the hostel in these respects.

It is a common idea that the secularity of hostel life is unsuited to India, and that sectarian hostels established on a religious basis would be more satisfactory. But the days for such impoverishing isolation are long past. To isolate Hindus or Mahomedans is merely to narrow their view and deprive them of background, and it is the very life of each to be in constant touch with the other. This is how individual "wholeness" and national unity are produced. Give us the hostel where a man is confirmed and strengthened in his religious creed and principles and at the same time learns the worth of people whose religion is radically different from his own.

The view of the *Indian Social Reformer* is an interesting one, and its editor, who does not argue without data, must have come across unsatisfactory hostels. But this unsatisfactoriness is not essential to the system, and we wish he could pay a visit (none would be more welcome than he) to the Maharaja's College Hostel in Mysore.

## THE THEORY OF RELATIVITY. (II)

### 7. THE HYPOTHESES OF THE SPECIAL THEORY OF RELATIVITY.

THE Special Theory of Relativity aims at solving the apparent contradiction between the principle of relative velocity, and the constancy of the velocity of light—a consequence of the special principle of relativity supported by experimental evidence. Einstein attributes this contradiction to the erroneous Newtonian view that space and time are absolute. In this theory, he introduces such fundamental ideas of space and time as to bring about a perfect equivalence of systems in uniform motion with respect to one another. We may therefore enunciate the two hypotheses of the special theory thus:—

(a) *The Principle of Relativity.*—If  $S, S'$  are two systems of reference having a uniform motion of translation with respect to one another, they are essentially equivalent for the description of general physical laws.

(b) *The principle of constant light velocity.*—Every observer, whatever the circumstances of his position or motion (and whatever the motion of the source emitting the light), finds the same value  $c=3.10^{10}$  cms. per second for the velocity of propagation of light in vacuo.

These principles will be referred to as (a) and (b) respectively.

### 8. THE CONCEPT OF SIMULTANEITY.—THE RELATIVITY OF TIME.

In elementary science, we are taught that the senses are the gateways of knowledge, which is therefore limited by their limitations

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\* Newton's conception of absolute time is thus quoted by Dr. Silberstein:—  
“Absolute, true, and mathematical Time is conceived by Newton as flowing at a constant rate, unaffected by the speed or slowness of the motions of material things. It is also called Duration.” As Dr. Silberstein points out, the phrase “flowing at a constant rate” is meaningless. There is no such time at all as is here conceived; or rather we do not know how to measure such a time, and it is therefore non-existent for physical purposes. Great dissatisfaction had been expressed with these conceptions of absolute space and time even in the 19th century. Thus—  
“The absolute motion generally admitted up to now is a *pure chimera* based on another chimera, that of an eternal and absolute space. We have also to combat a conception as chimerical as that of space *viz.*, that which makes time an entity real, necessary, and independent of all creation.”—DUHAMEL.

“Newton referred all of mechanics to absolute space! . . . It appears to be pretty much one and the same thing whether we refer the laws of motion to absolute space or enunciate them in a perfectly abstract form; that is to say, without specific mention of any system of reference.”—MACH.

and capacity. Of these, the sense of sight is certainly the most important, for we depend on the eyes for all our knowledge of distant things. With the invention of the telescope, our capacity of seeing increased; and the photographic plate has extended the range of our knowledge to considerable distances. But light has got a finite velocity of propagation, though great. And the distances of the stars are so great that even with this speed, light takes years, nay, even centuries to reach us. We therefore conclude with Prof. Turner, "our universe is not co-existent; the part close around us belongs to the peaceful present, but the nearest star is still in the midst of the late war, for our news of him is three years old."

This immediately raises the question—what are we to understand by simultaneous events at distant places? We need not pause to consider the concept of universal simultaneity which for what we know may not be a self-consistent notion at all. At any rate we are safe in affirming that it cannot be physically determined and is therefore meaningless for physical purposes.

Einstein gives an answer to this question with the aid of (b). Let us have a number of clocks of identical construction set in such a manner that the positions of their pointers are simultaneously the same. —We are of course supposed to know local simultaneity, *i.e.* simultaneity at the same place—, and suppose they are *synchronous* at a place A (*i.e.* they are perceived to go at the same rate). Now if one is removed to B, are we justified in assuming that it will be synchronous with any of the clocks at A? Suppose, to begin with, that A and B belong to the same system (*i.e.* are at rest relative to one another). At time  $t_a$  (as measured by a clock at A) send a light flash from A to B. Let it reach B at time  $t_b$  (as measured by the clock at B). Instantaneously let the light be sent back, (say, reflected back by a mirror placed at right angles to its path), and let  $t_a'$  be the time at which it reaches A. Then if  $t_a' - t_b = t_b - t_a$ , Einstein defines the clocks at A and B to be synchronous with one another. Thus *the times as measured at various places of the system S are connected with one another so as to form one time only which we may call the S-time*. We similarly define the times of other systems which possess physical properties similar to S by (a). Now if we suppose all events to be labelled with the corresponding times, those events at various places of S which receive the same labels are defined to be simultaneous in the system S.\* Let us now assume that *events locally*

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\* There is nothing essentially new so far. The novelty arises in the extension of this conception to systems in uniform motion with respect to one another.



*simultaneous* (i.e. occurring at one and the same place) for an  $S'$  observer should also be simultaneous for the  $S$  observers.\* But the time labelling of events occurring at different places being done according to different standpoints in different systems  $S, S', S'' \dots$  will generally not coincide with one another, i.e. two events occurring at two distinct places which are simultaneous in  $S'$  are generally not simultaneous in  $S$ .

To give a clear idea of the relativity of simultaneity, let me take Einstein's simple example. Let  $A, B$  be two points on a road, and  $M$  its middle point;  $A', B', M'$  the corresponding points on a moving train. Let an observer at  $M$  be provided with an arrangement to enable him to see two events (say lightning flashes) occurring at  $A, B$ . If he perceives them simultaneously, the events are simultaneous from ( $b$ ); the rays of light proceeding from  $A, B$  meet at  $M$ . Just when the lightning flashes occur, let  $M'$  coincide with  $M$ . An observer at  $M'$  moves to the right with the velocity  $v$  of the train, i.e. he is moving towards the rays from  $B$  and away from the rays from  $A$ . "Hence the observer will see the beam of light emitted from  $B$  earlier than he will see that emitted from  $A$ . Observers who take the railway train as their reference body must therefore come to the conclusion that the lightning flash  $B$  took place earlier than the lightning flash  $A$ ."† We conclude with Einstein.

\* This amounts mathematically to supposing that for fixed values of  $x', y', z'$  in  $S'$  there is a definite value of  $t$  for every  $t'$  i.e. a one-to-one correspondence between  $t'$  and  $t$ . Similarly also we assume a one-to-one correspondence between the values of  $x', y', z'$  and  $x, y, z$  for  $t' = \text{constant}$ .

† These sentences are quoted in Einstein's own words. Dr. William H. Pickering is wrong when he writes (*vide* Scientific American Monthly, April 1921)—"Again imagine a flash of light such as an explosion, to occur when an observer is in a given position. It makes no difference how the observer may move while the light is approaching him, whether several miles forward or backward, the light will reach him in exactly the same time, as is shown by Michelson's experiment. Or if two observers are at the same spot when the explosion occurs, and one moves forward and the other backward, they will both see the explosion at exactly the same instant." This he says is the "logical interpretation of Einstein's second principle" ( $b$ ). This contradicts Einstein as quoted above. It is not the logical interpretation of ( $b$ ); for ( $b$ ) merely states that the rod and clock behave in such a way as to bring about a constancy of the velocity of light; or rather, Einstein deduces from ( $a$ ) and ( $b$ ) that a measuring rod and clock of an observer behave differently when he is in motion from when he is at rest. Their behaviour (for the case of an observer moving with velocity  $v$  in the positive direction of the axis of  $X$ ) is embodied in the Lorentz transformation which is

$$\begin{aligned} x' &= \gamma (x - vt) & S & \text{-----} O \\ y' &= y & z' &= z, \\ t' &= \gamma \left( t - \frac{v}{c^2} x \right) & \text{where } \gamma^2 (1 - \frac{v^2}{c^2}) &= 1. \end{aligned}$$

"Events which are simultaneous with reference to the embankment are not simultaneous with respect to the train, and *vice versa* (relativity of simultaneity). Every reference body (co-ordinate system) has its own particular time; unless we are told the reference body to which the statement of time refers, there is no meaning in a statement of the time of an event."

### 9. THE RELATIVITY OF DISTANCE.

It has been seen that to reconcile theory and observation, Lorentz puts forward the contraction hypothesis according to which the length of a material segment OA when in motion in the direction OA with velocity  $v$  becomes  $OA \sqrt{1 - \frac{v^2}{c^2}}$  where OA is the length of the segment when at rest.\* Hence if an observer measures the distance

Let S be a source emitting a flash and O an observer at relative rest so that O and S belong to the same system. Let a flash be emitted from S at time zero. O finds the distance  $OS = x$  and the time  $t$  such that  $\frac{x}{c} = t$ . If O begins to move with velocity  $v$  to the right, he finds the distance

$$\begin{aligned} SO &= x' = \gamma(x - v \frac{x}{c}) \\ &= \gamma x (1 - \frac{v}{c}) \end{aligned}$$

and the interval to be

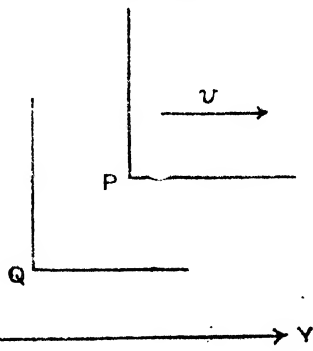
$$\begin{aligned} t' &= \gamma(t - \frac{v}{c} t) \\ &= \gamma t (1 - \frac{v}{c}) \end{aligned}$$

$t'$  is certainly not the same as  $t$  though  $\frac{x'}{t'} = c$ . Similarly when he moves towards S. Hence Dr. Pickering's statement that they will perceive "at the same instant" is meaningless. In fact the fundamental consequences of the theory of relativity are that the time interval between two events, and the distance between two points of a rigid body are both dependent on the condition of motion of the body of reference; and incompatibility between the law of propagation of light and the principle of relative velocity arises from taking them to be independent of the condition of motion of the body of reference.

\* The following quotation will help the reader to understand the relativity point of view regarding the contraction:—"When a rod is started from rest into uniform motion, nothing whatever happens to the rod. We say it contracts; but length is not a property of the rod; it is a relation between the rod and the observer. Until the observer is specified, the length of the rod is quite indeterminate. We ought always to remember that our experiments reveal only relations, and not properties inherent in individual objects."—EDDINGTON, Contrast with the old view which Sir Oliver Lodge expresses thus (*Nature*, August 4, 1921):—"Note that space or aether does not shrink, but only the matter in space. The distance  $x$  has not changed but only the instrument with which you hypothetically measure it. That having shrunk the fixed distance measures out longer." The word shrink is inappropriate according to the relativity standpoint.

AB between two points of a rigid body when at relative rest and finds it to be  $l$ , then if the body is set in motion with velocity  $v$  in the direction AB, and the observer at rest now sets to measure the distance, he finds it to be  $l \sqrt{1 - \frac{v^2}{c^2}}$ . On the other hand if AB is at right angles to the direction of motion of the body, he finds the length to be the same as before; *it is only the length in the direction of motion that contracts*. The contraction hypothesis leads therefore to the conclusion that *the distance between any two points of a rigid body depends on its condition of motion relative to the observer*.

An interesting point with reference to this contraction is the reciprocity of the relationship.\* Let P and Q be two observers at rest relative to each other and let them hold two rods, each of the same length  $l$ , at right angles to each other as in the figure. When they are at rest relative to each other, the rods have all the same length  $l$ . Suppose now that P begins to move with velocity  $v$  in the direction XY, and let them set to measure the lengths of the rods. Q finds that P's rod parallel to XY has contracted to  $l \sqrt{1 - \frac{v^2}{c^2}}$  and that the other retains its length. Similarly also P. He finds that Q's rod parallel to XY has contracted to  $l \sqrt{1 - \frac{v^2}{c^2}}$ , whereas the other retains its length. Thus each finds that the other's rod has contracted. This is indeed a paradox. As Eddington has put it,—it is natural that the Lilliputians should regard Gulliver as a giant, and Gulliver regard the Lilliputians as dwarfs. But that each should regard the other as a giant is an idea which surpasses the imagination of the novelist. It is to be found only in the sober pages of science.



#### 10. THE LORENTZ TRANSFORMATION.

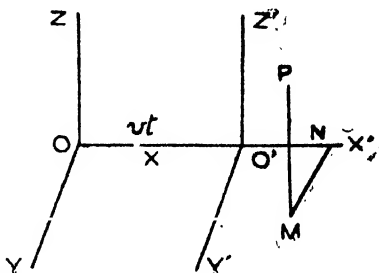
We have already noticed that an event is particularised with respect to a frame of reference S by  $x, y, z, t$ , the space co-ordinates, and

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\* Cf. "The principle of relativity teaches us that, as judged from S, the length of a unit measuring rod which is at rest with reference to S' must be exactly the same as the length, as judged from S' of a unit measuring rod which is at rest relative to S."—EINSTEIN.

the S-time at which it occurs. Suppose we have two systems of reference S, S' in uniform motion with respect to one another. If the event is located in S' by  $x', y', z', t'$  (these are measured physically by observers on the system S') what are the relations between the co-ordinates of the same event, *i.e.* between  $x', y', z', t'$  and  $x, y, z, t$ ? These relations must be consistent with (a) and (b).

On the hypothesis of Newton's absolute ideas of length and distance, we have from the figure that if the axes of reference of S', O'X', O'Y', O'Z' originally coincided with OX, OY, OZ and have a uniform velocity  $v$  in the direction of the X-axis, then



$$x' = x - vt, \quad y' = y, \quad z' = z, \quad t' = t$$

This gives equal values for the accelerations of any point as measured by observers in the two systems, thus leading to the mechanical principle of relativity.

Now according to the new ideas of the relativity of time and distance, as developed in the preceding sections, we have to find formulæ of transformation which will satisfy the special principle of relativity, and the law of constant light-velocity. The formulæ giving the relations between  $x', y', z', t'$ , and  $x, y, z, t$  are called the Lorentz transformation and for the case represented in the above figure, they are

$$x' = \gamma (x - vt), \quad y' = y, \quad z' = z, \quad t' = \gamma \left( t - \frac{v}{c^2} x \right) \quad (c)$$

where  $\gamma^2 \left( 1 - \frac{v^2}{c^2} \right) = 1$

The following simple derivation of them is due to Einstein. We may obviously consider an event localised in the common X-axis so that we have to find the relation between  $x', t'$  and  $x, t$ . Suppose that when O, O' coincide (*i.e.* just when the axes of S' begin to move with velocity  $v$ ) let a light signal be transmitted from O in the positive direction of the X-axis. An observer in S finds that it is transmitted according to the equation

$$x - ct = 0. \quad (1)$$

Similarly by (b), an observer in S' finds that it is transmitted according to the equation

$$x' - ct' = 0. \quad (2)$$

(1) and (2) must be satisfied simultaneously. This will be the case if

$$x' - ct' = \lambda (x - ct)$$

where  $\lambda$  is a constant. Similarly if it is transmitted in the negative direction of the X-axis, we obtain

$$x' + ct' = \mu (x + ct)$$

Hence writing  $a = \frac{\lambda + \mu}{2}$ ,  $b = \frac{\lambda - \mu}{2}$ , we get

$$x' = ax - bct$$

$$t' = act - bx$$

For the point  $O'$ ,  $x' = 0$ . Hence  $x = \frac{bc}{a}t$

$$\text{Hence } \frac{dx}{dt} = \frac{bc}{a}$$

i.e. the velocity of  $S'$  with respect to  $S$  is  $\frac{bc}{a}$

$$\therefore \frac{bc}{a} = v$$

Also the length of a unit rod of  $S$  as measured from  $S'$  is the same as that of a unit rod of  $S'$  as measured from  $S$ . Now the length of a rod of  $S'$  will be measured by finding the distance between its extremities at a certain time of  $S$  (say  $t=0$ ). We find that  $x' = ax$ .

Thus if  $x'=1$ , i.e. if the rod is of unit length, its measurement from  $S$  is  $x = \frac{1}{a}$ .

But if an observer of  $S'$  measures a unit rod of  $S$  at some time of his (say  $t'=0$ ), he will find that

$$ax' + bt' = (a^2 - b^2)x.$$

$$\text{i.e. } x' = a\left(1 - \frac{b^2}{a^2} \frac{c^2}{c^2}\right)x.$$

$$= a\left(1 - \frac{v^2}{c^2}\right)x.$$

If  $x=1$ , i.e. the length of a unit measuring rod of  $S$  as judged from  $S'$  is

$$a\left(1 - \frac{v^2}{c^2}\right)$$

by the principle of relativity, these should be the same.

$$\therefore \frac{1}{a} = a\left(1 - \frac{v^2}{c^2}\right).$$

$$\text{i.e. } a^2\left(1 - \frac{v^2}{c^2}\right) = 1.$$

$$\text{i.e. } a = \gamma \text{ as above assumed.}$$

The transformation therefore follows immediately. The above are the equations of transformation to pass from  $x$  to  $x'$ . The equations for passing from  $x'$  to  $x$  may be obtained by remembering that the axes of reference of  $S$  have a velocity  $-v$  in the direction of the  $X$ -axis relative to those of  $S'$ . Hence in the above equations, we have simply to change  $x$  to  $x'$  and  $x'$  to  $x$ ,  $t$  to  $t'$  and  $t'$  to  $t$ , and write  $-v$  for  $v$ . The equations are easily seen to be,

$$x = \gamma (x' + vt'), \quad y = y', \quad z = z', \quad t = \gamma (t' + \frac{vx'}{c^2}). \quad (d)$$

The following are a few interesting inferences from the above transformation :—

$$(a) \quad x'^2 + y'^2 + z'^2 - c^2 t'^2 = x^2 + y^2 + z^2 - c^2 t^2$$

by simple algebra, and hence the two sides vanish simultaneously. Now suppose a light flash emitted at the instant  $t=0$  by a point source placed at the origin  $O$ . Then an observer on  $S$  finds that it is transmitted according to the equation

$$x^2 + y^2 + z^2 - c^2 t^2 = 0.$$

Since  $O'$  coincides with  $O$  at the instant  $t = t' = 0$ , an observer of the system  $S'$  finds that the flash is transmitted according to the equation

$$x'^2 + y'^2 + z'^2 - c^2 t'^2 = 0.$$

*i.e.* both observers find the same value  $c$  for the velocity of propagation of light. The wave surface which an  $S$ -observer finds to be  $\gamma = ct$  is found by an  $S'$ -observer to be  $\gamma' = ct'$ . Hence the statement of Jeans, "no matter what the velocity of the observer is, the light surface, as observed by that observer, is invariably a sphere having that observer as centre."

(b) It is easily seen that the length of a unit rod of  $S$  as judged from  $S'$ , or of  $S'$  as judged from  $S$ , is  $\sqrt{1 - \frac{v^2}{c^2}}$  giving the Lorentz contraction.

(c) At any given place *i.e.* for any given values of  $x', y', z'$  (say  $x'=y'=z'=0$ ), we have  $t=\gamma t'$  (from (d)). Of course,  $t'$  is the  $S'$ -duration of a phenomena going on at a point fixed in  $S'$  *i.e.* for constant  $x', y', z'$ . This time interval is found by the  $S$ -observers to be

$$t = \gamma t' = \frac{t'}{\sqrt{1 - \frac{v^2}{c^2}}}$$

which is greater than  $t'$ . Considering  $t'$  to be the interval between two indications of an  $S'$ -clock, which has a uniform velocity  $v$  with respect to the  $S$  clock, we have that a clock moving relatively to  $S$  with uniform velocity  $v$  goes slower than the same clock when at rest in  $S$ .

(d) One very important consequence of this transformation is the relativistic formula for the sum of two velocities. Let a particle P have a velocity  $u$  in the system  $S'$ . So if the coordinates of P be  $(x', y', z', t')$

$$\frac{dx'}{dt'} = u.$$

What is the measure of its velocity as measured from the system  $S$ ? Let its coordinates referred to  $S$  be  $(x, y, z, t)$ . Then as we know, the relation between  $(x', y', z', t')$  and  $(x, y, z, t)$  is given by the Lorentz transformation. We have to find the value of  $\frac{dx}{dt}$ , given  $\frac{dx'}{dt'} = u$ .

$$\text{Now } \frac{dx'}{dt'} = \frac{dx'}{dt} \cdot \frac{dt}{dt'}$$

$$\text{i.e. } u = \frac{\frac{dx}{dt} - v}{1 - \frac{v}{c^2} \cdot \frac{dx}{dt}}$$

$$\frac{dx}{dt} = \frac{u + v}{1 + \frac{uv}{c^2}}$$

i.e. the sum of two velocities  $u$  and  $v$  in the same direction is not  $u + v$  (of Newtonian mechanics) but

$$u + v$$

$$1 + \frac{uv}{c^2}$$

Consider the case of  $u, v$  being each smaller than  $c$ ; say  $u = c - m$ ,  $v = c - n$ , where  $m$  and  $n$  are positive and smaller than  $c$ . Then the resultant

$$V = \frac{(2c - m - n) c}{2c - m - n + \frac{mn}{c}}$$

and this is less than  $c$

i.e. the resultant of any two velocities smaller than the velocity of light in vacuo is again smaller than the velocity of light.  $c$  plays the part of an infinite velocity, inasmuch as it cannot be obtained by the accumulation of any number of velocities smaller than  $c$ .

Again let one of the velocities  $v$  be equal to  $c$ . Then  $V = \frac{c + u}{1 + \frac{u}{c}} = c$

i.e. the resultant of  $c$  and any other parallel velocity (no matter whether it is smaller than, equal to, or greater than  $c$ ) is again the velocity of light  $c$ . This is to be expected; for the system  $S'$  travelling with the velocity of light simply appears to the  $S$ -observers as a line at right angles to its direction of motion (by the contraction hypothesis). According to this theory, since it is impossible to get the velocity of light even by accumulation,  $c$  and any greater velocity must be super-

## THE THEORY OF RELATIVITY (II)

natural i.e. it can be brought into existence only by an act of creative power. We may say, it does not exist.

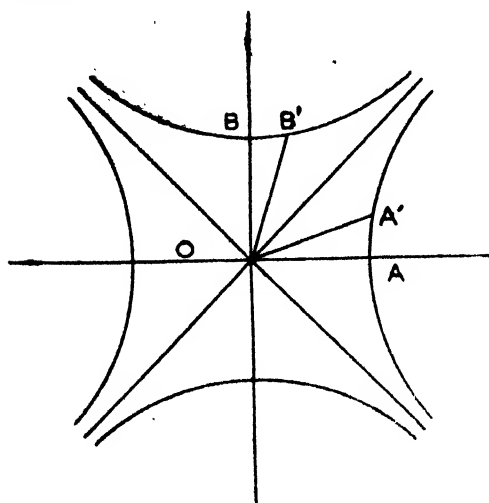
Now consider the case of a particle Q having in S' a velocity  $u$  in the direction of the Y-axis and no others so that

$$\frac{dy'}{dt'} = u.$$

$$\begin{aligned} \therefore u &= \frac{dy'}{dt'} = \frac{dy'}{dt} \bigg/ \frac{dt'}{dt} \\ &= \frac{dy}{dt} \bigg/ \gamma \left(1 - \frac{v^2}{c^2}\right) \quad \text{Since } \frac{dx}{dt} = v \text{ from } \frac{dx'}{dt'} = 0. \\ &= \frac{dy}{dt} \bigg/ \sqrt{1 - \frac{v^2}{c^2}} \end{aligned}$$

As judged from the system S, Q has the velocities  $v$  in the direction of the X-axis and  $\frac{u}{\gamma}$  in the direction of the Y-axis. Hence the relativistic resultant of these two velocities  $u$  and  $v$  at right angles is the Newtonian resultant of  $\frac{u}{\gamma}$  and  $v$  at right angles.

It is very easy to see that if S' moved with velocity  $u$  and Q moved with velocity  $v$  in S' parallel to the Y-axis, the magnitude of the velocity of Q as judged from S is the same in both the cases, but the directions, different.



(e) The following is a remarkable geometric interpretation of the transformation due to Minkowski.\*

Take two axes of  $x$  and  $ct$  at right angles and draw the rectangular hyperbolæ.

$$x^2 - c^2t^2 = 1.$$

$$x^2 - c^2t^2 = -1.$$

and their asymptotes

$$x^2 - c^2t^2 = 0.$$

Consider a system S' having with respect to S

\* This is suggested without proof in Silberstein, Theory of Relativity. For another proof, see A. Steichen, Journal of the Indian Mathematical Society Vol. V, No. 1, p. 9.



a velocity  $v$  in the direction of the  $X$ -axis. Through  $O$ , draw  $OA'$  inclined to  $OA$  at an angle  $\psi = \tan^{-1} \frac{v}{c}$ .

and  $OB'$  inclined to  $OB$  at the same angle. To pass from the system  $S(x, t)$  to  $S'(x', t')$ , take  $OA'$  for the new axis of  $x'$  and  $OB'$  for the new axis of  $ct'$ . Take also  $OA'$  and  $OB'$  as the new units of  $x'$  and  $ct'$ .

Now let  $P$  be any point  $(x, ct)$  and let  $OL, LP$  be  $x_1, y_1$ .

We have obviously

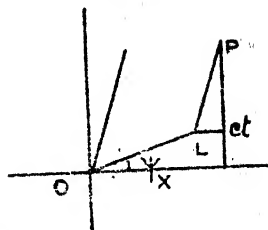
$$x = x_1 \cos \psi + y_1 \sin \psi,$$

$$y = x_1 \sin \psi + y_1 \cos \psi.$$

Hence easily

$$x_1 = \frac{1}{\cos 2\psi} (x \cos \psi - ct \sin \psi)$$

$$y_1 = \frac{1}{\cos 2\psi} (-x \sin \psi + ct \cos \psi)$$



$$\text{Also } x' = \frac{x_1}{OA'} = \frac{x_1}{\gamma \sec \psi} \quad \text{where } \gamma^2 \left(1 - \frac{v^2}{c^2}\right) = 1$$

$$ct' = \frac{y_1}{OB'} = \frac{y_1}{\gamma \sec \psi}$$

$$\text{Also } \cos 2\psi = \frac{\cos^2 \psi}{\gamma^2}$$

$$x' = \frac{1}{\gamma \sec \psi} \cdot \frac{1}{\cos 2\psi} (x \cos \psi - ct \sin \psi)$$

$$= \frac{x - ct \tan \psi}{\gamma \cos 2\psi} \cos^2 \psi.$$

$$= \gamma (x - vt).$$

$$ct' = \frac{1}{\gamma \sec \psi} \cdot \frac{1}{\cos 2\psi} (-x \sin \psi + ct \cos \psi)$$

$$= \frac{ct - x \tan \psi}{\gamma \cos 2\psi} \cos^2 \psi$$

$$= \gamma c \left(t - \frac{v}{c^2} x\right)$$

$$\therefore t' = \gamma \left(t - \frac{v}{c^2} x\right)$$

Hence the Lorentz transformation is equivalent to passing from one set of conjugate diameters  $OA, OB$  of the rectangular hyperbola  $x^2 - c^2 t^2 = 1$  to another and in taking their lengths as the new units of  $x$  and  $ct$ . For another even more remarkable geometric interpretation, also due to Minkowski, see Silberstein, *The Theory of Relativity*, page 127).

## 11. CHANGE IN THE CONCEPTIONS OF MASS AND ENERGY.

Among the most important changes in our ideas introduced by the

## THE THEORY OF RELATIVITY (II)

special Theory of Relativity are those in our conceptions of mass and energy. According to classical mechanics, the kinetic energy of a particle of mass  $m$  moving with velocity  $v$  is  $\frac{1}{2}mv^2$ . But in a line with changes introduced in many other things, the dynamics of a particle of the special theory gives as the kinetic energy the expression

$$\frac{mc^2}{\sqrt{1 - \frac{v^2}{c^2}}}$$

which approaches infinity as the velocity  $v$  approaches that of light. (See Silberstein, page 195). We already saw that by no amount of addition of velocities can we reach the velocity of light; this shows that by no amount of addition of energy can a particle obtain that velocity. The expression for the kinetic energy can be written.

$$mc^2 \left\{ 1 + \frac{1}{2} \frac{v^2}{c^2} + \frac{1.3}{2.4} \frac{v^4}{c^4} + \frac{1.3.5}{2.4.6} \frac{v^6}{c^6} + \dots \right\}$$

The second term gives the familiar expression; the third and following terms are negligible since  $\frac{v}{c}$  is small. The term  $mc^2$  gives the energy the particle possessed before it attained any velocity and may therefore be taken to give the amount of energy represented by its mass. If this energy is represented by  $E$ , then the mass as ordinarily understood is  $\frac{E}{c^2}$ . To this point presently.

From Maxwell's fundamental equations of electrodynamics, it is deduced that if a body moving with velocity  $v$  absorbs an amount of energy  $E_0$  in the form of radiation without any change of velocity (as judged from the system of the body  $S'$ ), the  $S$ -observer finds that its energy is increased by an amount

$$\frac{E_0}{\sqrt{1 - \frac{v^2}{c^2}}}$$

Thus the total energy of the body will be

$$\frac{\left(m + \frac{E_0}{c^2}\right)c^2}{\sqrt{1 - \frac{v^2}{c^2}}}$$

i.e. it has the same energy as a body of mass  $m + \frac{E_0}{c^2}$ . Thus a body absorbing an amount of energy  $E_0$  has an increase of mass  $\frac{E_0}{c^2}$ . In other words the mass of a body is not any characteristic invariable quantity.

as originally believed, but varies according to the change in the energy of the body. In fact mass may be simply regarded as a measure of its energy, and so considered, the laws of conservation of mass and energy become identical and hold for any system which does not absorb or throw out energy in any way.\*

## 12. THE FOUR DIMENSIONAL CONTINUUM.

From the arguments of the previous sections, we have been led to conclude that length and time are dependent on the condition of motion of the observer. They merely express relations between the observer and the observed, which change with their relative motion. This means that for physical purposes, we enunciate the laws of nature with respect to a frame of reference, which consists of a system of axes and clock. Mathematically the values of  $x, y, z, t$ , must be chosen as one whole. We have thus reasons to conclude that objects exist in a four dimensional world of space-time. It has been called a continuum, and by four-dimensional, we mean that to specify any element of it, we require four independent quantities.

A point in space at an instant in time is called an event (or world-point) which therefore corresponds to a set of values of  $x, y, z, t$ . The whole manifold of all events (consisting of all possible values of  $x, y, z, t$ ) is called the world. If a particle is watched during its whole history it occupies a continuous chain of points which is called the world-line of the particle. The world is filled with the world-lines of the various objects, and physical laws would find "their most perfect expression in the mutual relations obtaining between these world-lines."

It is of course obvious that we can never obtain a clear mental picture of this view of the world. We do not possess the requisite faculties. The mathematician is at an advantage in that he can derive their properties and relations by means of his symbols without caring to inquire of the possibility of a mental picture.

Take the case of a particle moving with uniform velocity with reference to a given system  $S$ . The relation between its co-ordinates will obviously be linear, and its world-line, by analogy, is said to be a straight line. If it is at rest with reference to  $S$ , the world-line of the particle is the axis of time, the axes of  $x, y, z, t$  being also considered straight lines in the four dimensional world.

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\* Cf. Freundlich—Foundations of Relativity—"A hollow space, enclosed by reflecting walls of no mass and filled with radiation—(cavity-radiation)—when set in motion reveals the properties of inert mass according to Maxwell's theory, on account of the enclosed energy of radiation."

One consequence of this representation is important: *what, we observe are always intersections of world-lines.* They are the reality. As we move through the world along our world-lines, we observe their intersections with those of others i.e. we have the events of life. We do not know, and can never find out the course of the world-lines between the points of intersection. Places of non-intersection of the observer's world-line indicate his sleep or death.

Now let there be an observer. He has his own world-line. He locates the events of the world (i.e. the intersections of his world-line with others) with reference to his world-line. His world-line is his time direction and he partitions the world into space and time with reference to it. In fact we may state that his time-direction is that in which he progresses without effort. By a conscious effort only does he change his space direction.\* To the astronomer who says that even unconsciously we are moving in space owing to the earth's motion round the sun, Eddington answers that you consider so because you choose the sun's world-line for your time direction.† It has certain advantages over the world line of a terrestrial observer, but it is artificial, "because (1) there is in external nature no separation of space and time at all and (2) it disagrees with the only natural separation of space and time which exists, namely, that in an observer's consciousness." If we change from one system to another, the observer's track in the world is changed; his time direction is altered, and hence *a change in the system of reference is equivalent to a rotation of the time direction in the world. The effect is exactly the same as a similar change in a plane or space, viz., a bit of time goes into space, a bit of space into time; just as a bit of  $x$  goes into  $y$  and a bit of  $y$  into  $x$ .* This mutual dependence of space and time is contained in the Lorentz transformation.

As already remarked, we cannot obtain any representations of this geometry, but this is no defect as it is due to incapacity. A creature of two dimensions can never grasp clearly the idea of a third dimension though it may be able to work out the geometry of three dimensions by the help of symbols. It can never visualise the pure geometrical aspect of it, but it can study two dimensional sections by giving definite values to one of the variables. Similarly we can study sections of the four dimensional world by taking three dimensional section,  $(x, y, t)$  or plane drawings  $(x, t)$ .‡

\* Cf. H. G. Wells, "There is no difference between Time and Space except that our consciousness moves along it."

† Monthly Notices of the Royal Astronomical Society, Vol. LXXX, No. 2.

‡ Cf. H. G. Wells—"For instance, here is a portrait of a man at eight years old, another at fifteen, another at seventeen, another at twenty-one and so on. All

Let me finally remark that by considering two events the relative position of which is given by space co-ordinate differences  $dx, dy, dz$  and time difference  $dt$ , and for which the differences in a second system are  $dx', dy', dz', dt'$  we easily have

$$ds^2 = dx^2 + dy^2 + dz^2 - c^2 dt^2 = dx'^2 + dy'^2 + dz'^2 - c^2 dt'^2$$

$ds$  is defined to be the interval between the events and is constant for all reference systems. Also if we put  $ict = w$  where  $i = \sqrt{-1}$ , then

$$ds^2 = dx^2 + dy^2 + dz^2 + dw^2$$

$$\text{and } x^2 + y^2 + z^2 + w^2 = x'^2 + y'^2 + z'^2 + w'^2$$

"Under these conditions, the natural laws satisfying the demands of the special theory of relativity assume mathematical forms in which the time co-ordinate plays exactly the same role as the pure space co-ordinates. As a consequence of this purely formal addition to our knowledge, the theory performs gained clearness in no mean measure."

C. KRISHNAMACHAR.

(To be continued.)

these are evidently sections, as it were. Three-Dimensional representations of his Four Dimensioned being, which is a fixed and Unalterable thing." Dr Silberstein remarks, "Thus, Mr Wells seems to perceive clearly the absoluteness, as it were, of the world-tube and the relativity of its various sections."

## THE GROWTH OF PSYCHOLOGY.—III.

### III.

WE have already seen that the phenomena of hypnotism and somnambulism distinctly pointed to the existence of the unconscious. But the early history of hypnotism emphasised so much the hypnotiser, and somnambulism was taken so much as an inexplicable fact of nature that their real importance was naturally lost sight of. The unconscious emerged in its own native importance mainly as a result of neuropathology. When that interesting and almost fascinating little book, Dr. Bernard Hart's *The Psychology of Insanity*, was published by the Cambridge University Press, a Cambridge don was heard to remark that while reading it he began to doubt whether he was sane or insane. Probably every reader of the book feels more or less convinced that after all the boundaries that divide the sane from the insane are neither so rigid nor so definite as our "sanity" usually takes for granted. Insanity at present is regarded not merely as a matter of defective brain or injured brain, though these physiological factors also have their own importance, but rather as due to some preponderating "complex." Jung used this term in connection with a system of associated mental elements, which in pathological cases, become practically separated from the normal unity of human consciousness. In other words, certain ideas become obsessions—gathering other ideas about them so as to form coherent systems. Thus we find insane persons believing themselves to be kings or millionaires and trying to convince others. They adopt pompous modes of speech and gait. Such obsessions or "complexes" are at variance with actual facts, and thus definitely tend to demarcate their subjects as insane people. But a closer study of normal life has revealed the fact that even the sane are not free from "complexes," only they are held in check and they form a part of the normal unity of conscious life. Various hobbies, *e.g.* stamp-collecting, are instances of innocuous complexes, and so also certain ideas, which dominate our intellectual life whether they be our philosophical theories or religious convictions, or political creed. Hence the term complex has been used in recent psychological literature in its broadest sense free from all allusion to insanity. Tansley, defines it as "a system of associated mental elements, the stimulation of any one of which tends to call the rest into consciousness through the

medium of their common affect."\* Closely connected with this term is the term *libido*, popularised by Jung. It stands for psychical energy inhering in a complex and seeking an outlet along appropriate channels. Although Freud uses the term in a somewhat sexual sense consistently with his general theory, yet Jung's usage of it in its broadest sense is most commendable. While the term *complex* emphasises the cognitive aspect, the term *libido* emphasises its conative aspect, and both are equally important, as a complex sooner or later must manifest itself in some overt action.

The New Psychology recognises three main complexes relating to sex, ego and herd respectively. The ego complex primarily manifests itself in the form of self-preservation and self-advancement, and employs instincts and reason alike for achieving its end. As self-preservation is the first law of nature, it is but natural that the ego-complex should be universally present in all beings. The extreme unruliness displayed by a starving garrison or populace finds its explanation in the ego-complex. The economic theory of Marx raises its elaborate structure of arguments and theories on the idea that the belly rules the universe, and the satisfaction of hunger is but one potent manifestation of the ego-complex. In extreme circumstances men have not hesitated to kill one another as the last mode of satisfying their hunger. Students of English Criminal Law cannot be unacquainted with that curious case in which some ship-wrecked sailors were charged with the murder of a boy-companion at sea, on whose flesh they managed to live till they were picked up by a passing boat. If, however, the ego-complex has been responsible for such sordid manifestations, we cannot forget it has been to a much greater extent responsible for every forward step taken by human civilisation.

The herd-complex is more familiarly known as the herd instinct through the famous articles of Mr. W. Trotter in the *Sociological Review*, 1908, subsequently published in book-form: *The Instincts of the Herd in Peace and War*. The gregarious instinct manifests itself among human beings chiefly through imitation and the power of suggestion. The history of childhood is a series of imitations, and education is almost cent per cent suggestion. Logicians may define man as a rational animal, but the fact remains that few men really think for themselves. The few who can think become genuine leaders, heroes. The rest follow. The frenzy which so frequently overtakes a crowd, and the hysterical activity which characterised the masses during the last war, even in the

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\* "Affect" is used to denote the specific emotion aroused by a cognition.

twentieth century, alike proclaim the power of the herd instinct. The essential weakness of an isolated ego, however strong his own ego-complex, essentially makes for union, and a social union can hope to exist and withstand all dangers whether from natural forces, the wildness of animals or the cupidity of men, only if its herd instinct is strong enough to keep the individuals severely loyal to the interests of the herd.

In connection with the ego-complex we have already spoken of the might of hunger. Another equally mighty manifestation of the ego-complex is sex. But sex is so complex and so elusive, so markedly resourceful and universal that sex-complex is given an independent co-ordinate position along with the ego and the herd complexes. In fact sex constitutes, if not the whole, at least the major portion of the psychology of the unconscious, and the reason for this is easily afforded by a study of neuropathology.

When insanity came to be studied on its psychical side, it was found that it covered a wide range from the insane who practically had no intervals of lucidity at all to those, who, apparently and for all practical purposes sane, suffered from nervous troubles, giving them an instability of mind and consequent weakness of character. All such cases were brought to light by the hypnotisers generally and particularly by the Nancy School. But subsequently arose a new genius, Dr. Sigmund Freud of Vienna, who brought a new method to bear on such cases, and his conclusions have shed a new light altogether on human psychology. The method he employed is known as the psycho-analytic method or psycho-analysis in short, though in practice the term psycho-analysis has come to stand for the method and also the conclusions reached by it. A full account of the method will be found by the reader in Pfister's Psycho-analytic Method. In this place I can only hope to give one or two salient features of the method. But as the method proceeds on certain hypotheses, since abundantly justified, it will be necessary to explain some of the technicalities of Freudian psychology.

Early in his investigations Freud came to realise that the conscious opinions and actions of men do not always express their real nature. There are incidents in life, which are so unpleasant or which fill us with so much shame that we tend to forget them. In our conscious life the major portion of our experiences tends to be forgotten, and what is markedly interesting or arresting or what is necessary for our practical life constitutes our living memory. But what is forgotten by our conscious memory is not absolutely forgotten. It is really treasured up in the rich store-house of the unconscious of each man. Nothing is really forgotten or can be forgotten. Hence our conscious life, far from being



the whole, is the merest fraction of our total life. Incidents over which time has drawn a thick veil and which have totally escaped our memory can yet again with a certain amount of effort be revived. Forgotten faces, forgotten names, forgotten incidents with a conscious will can be forced out of their obscurity by our own individual effort. But not always. There are limits to our individual effort, and a good deal remains lost to our conscious memory, until psycho-analysis comes to our aid and the most hidden secrets and the most "forgotten" incidents emerge into the full light of consciousness. Now this forgetting, which cannot be overcome by our individual effort, is known as repression in Freudian psychology. The idea is that if a certain experience is very unpleasant, our consciousness tries to avoid it and in course of time actually succeeds in forgetting it. But it is not really and absolutely forgotten, it subsists and works in the unconscious in its own way. This produces nervous symptoms: absurd fears, mental instability, hysteria, fainting fits and such other disorders.

This same point may be illustrated in another way, as is very lucidly done by Dr. Hart. In empirical psychology we proceed on the assumption that the unity of our conscious life is complete, *i.e.* our experiences, albeit consciously remembered experiences, constitute one perfectly self-consistent whole. In actual fact this complete consistency is hardly ever realised. No person has ever been found to be thoroughly consistent in his actions. There are always aberrations, however trifling, from our strict ideals. Our actions do not always strictly harmonise with our talk. When this variation is not very great or infrequent, for all practical purposes we ignore it. When the variation is very great either of two things occurs: (1) We artificially demarcate our various spheres of action, *e.g.* an astute unscrupulous politician may be a thoroughly honest individual in private life. Or a statesman with high ideals of purity in public life, may be a notoriously bad husband. Or a man who is thoroughly trustworthy as a friend may not display a particle of conscience in his commercial dealings, *e.g.* a profiteer. In all such cases the persons concerned may be as conscious of their inconsistencies as others. But they justify themselves on such notorious half truths as: in politics we can't afford to be strictly moral, or private life has nothing to do with public life, or business is business, which is taken to justify any sort of swindling. In all such cases what happens is that different spheres of life are kept apart in watertight compartments, and any open conflict between the rival spheres is avoided.

(2) But this method of dealing with the conflicts of our mental life is not always possible. When the conflict is particularly severe, a war to the finish has to be waged, and as a result of it one party to the conflict tends to be repressed, to be forgotten and thus ensues a repression with all its serious mental restlessness and other nervous disorders, which defy drugs and present an inexplicable mystery to all, including the victim himself (or herself).

Many such cases came to Freud and he developed his psycho-analytic technique. His principle is to neglect the verdicts of conscious life, which regards something as absurd, nonsensical and what not, for this very nonsense may conceal in its bosom a key to unravel a deep-seated mystery. The reason for this is quite clear. Repression has occurred, just because conscious reason sought through it a way out of a conscious conflict, just as we often seek to postpone the evil day and as a result the situation becomes uncontrollable and our troubles only increase. So too in order to achieve peace an ugly memory is relentlessly repressed only to create fresh troubles in an indirect fashion. Consciousness in such cases opposes a definite obstruction to anything which tends to revive what has been successfully repressed. This inhibitory factor is spoken of by Freud as the censor. To take a concrete example: suppose A is in love with B, but meets with a severe disappointment, which means that his self-respect is wounded and the thought of B and everything relating to her becomes unpleasant. In self-protection such thoughts are avoided and ultimately repressed. On all future occasions whenever an opportunity offers itself for the resuscitation of such thought the "censor" intervenes and wards off all such opportunities. This hindrance is the greatest difficulty in the path of psycho-analysis, for consciousness is interested in concealing the trouble that psycho-analysis seeks to unravel. Thus it is clear why the pronouncements of consciousness have definitely to be neglected by a psycho-analyst.

At this stage the question arises: if consciousness is more of a hindrance than a help to a psycho-analyst, how does he proceed, what implements does he use? The answer of Freud has been unequivocally given: dreams. A little later we shall deal with the psychology of dreams. At this stage it will suffice to mention that Freud does not dismiss dreams as the idle vapourings of sleeping mind. He essentially regards them as the language of the unconscious, as significant and as intelligible as the language we continually employ during waking life. The idea is that during sleep our conscious life slumbers and thus the unconscious is free to emerge, and this it does in the form of dreams. The subject-matter and the mode of dreams furnish a key to the

unconscious, and once this key is furnished, the psycho-analyst proceeds by a skilful series of queries to unravel the secret of the unconscious. However paradoxical this method, it has abundantly justified itself by its results, as many a neurotic has been brought back to normal life through the blessings of psycho-analysis.

Another mode of proceeding is to make the patient give forth, whatever idea crosses his mind. No matter how absurd it may look it has its own logic and serves as a key to unlock the secrets of the unconscious.

To mention one method more which is particularly elaborated by Jung. It consists in mentioning a word and asking the patient to say which word first strikes him. This is called the reaction word. It is found that whenever a word relates to the unconscious trouble, there is a delayed reaction. The following taken from Dr. Hart will illustrate the point :—

	"Stimulus word		Reaction word	Reaction time in seconds	
1	Head	..	Hair	..	1.4
2	Green	...	Meadow	..	1.6
3	Water	...	Deep	...	5
4	Stick	...	Knife	..	1.6
5	Long	..	Table	..	1.2
6	Ship	...	Sink	..	3.4
7	Ask	..	Answer	...	1.6
8	Wool	..	Knit	..	1.6
9	Spiteful	...	Friendly	..	1.4
10	Lake	...	Water	...	4
11	Sick	...	Well	..	1.8
12	Ink	...	Black	..	1.2
13	Swim	...	Can swim	...	3.8 "

In the case of this patient water, ship, lake and swim caused longer reactions, and it was later discovered that during a recent attack of depression the patient had resolved to commit suicide by drowning.

As a result of a long series of psycho-analytic inquiries, Freud found that the one most disturbing factor in the life of man is sex and he traced all nervous disorders to sexual repression in one form or another. It is not an easy matter to refute Freud's proposition on his own ground. In one place he says "The ugliest as well as the most intimate details of sexual life may be dreamed about in apparently harmless allusions to culinary operations, and the symptoms of hysteria become practically unintelligible if we forget that sexual symbolism

can conceal itself behind the most commonplace and most inconspicuous matters, as its best hiding place. The fact that some neurotic children cannot look at blood and raw meat, that they vomit at the sight of eggs and noodles, and that the dread of snakes which is natural to mankind, is monstrously exaggerated in neurotics, all this has a definite sexual meaning. Wherever the neurosis employs a disguise of this sort, it treads the paths once trodden by the whole of humanity in the early ages of civilisation—paths of whose existence customs of speech, superstitions, and morals still give testimony to this day.”\* In other words Freud insists on seeing the erotic in the most innocent looking dreams. If he is criticised, he retorts that the categories of the conscious are not fit to decipher the mysteries of the unconscious, and thus seeks to silence our normal common sense. But if it is impossible to prove that Freud is wrong, it is open to his critics to mention the various grounds on which his views can be attacked, and no critic has done it more successfully than his own pupil and colleague, Prof. Jung of Zurich. But we shall deal with the question in a general way without restricting ourselves to the criticisms of Jung alone.

In order to have a correct and a just estimate of Freudianism it is essential that we should consider the peculiar circumstances under which it came to be developed. Freud is first and foremost a physician and he first came to be known to the world as the pupil of Dr. Breuer, with whom he collaborated in the production of “*Studien über Hysterie*.” Hysterical cases are pathological cases and when all is said and done Freud continues a pathologist. The immense success he has achieved, in curing the neurotic, whose troubles defied the efficacy of drugs and the skill of doctors, must be given this meed of praise that his theories must to a considerable extent share in the glory, even if it be merely reflected, of his successful practice. In all these pathological cases Freud by his skillful application of psycho-analysis found that the root trouble centred round sexual functions, a morbid aversion to sex, fostered by a puritanical environment; or some sexual perversity, driven underground by remorse and consequent repression; or a love disappointment actuated by the treachery of the beloved or a friend; or ungratified sexual desires or a markedly misplaced pathological passion, rendered odious by the anti-incest ethos of a people, and such other causes were found by Freud to be corroding the lives of his patients. We are not concerned here with the methods of cure adopted by him, but with the theory he built up on the basis of his cases. In a wide generalisation he declared

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\* Freud's *Interpretation of Dreams*, pp. 319—320.

sex to be the dominating factor in human life, much in the same way as with characteristic exaggeration Marx had declared economics—or hunger in vulgar language—to be the root-cause of all human activities.

*Prima facie* the universal reign of sex according to Freudianism receives the sympathetic support of all literature from the most ancient epics to the poetry and novels of our own day. When Virgil wrote in his *Georgics*: “*amor vincit omnia*” (love conquers all), and when Scott wrote in his *Lay*:—

“Love rules the court, the camp, the grove,  
And men below, and saints above ;  
For love is heaven, and heaven is love.”

we may detect in them Freudianism before Freud. Love has always dominated literature and in its various forms has been the consuming passion of poets and creative artists generally. But it would be futile to assume with Dryden that “great wits are to madness near allied,” or to dogmatise with Lombroso and Nisbet that genius is essentially insanity. For the inspiration of love is not confined to poets; it claims an ordinary man as its own with as much ease. A striking proof of this was brought home to me very recently. A hard-headed lawyer who had evaded the shafts of Cupid for nearly forty years was ultimately brought low by the power that is not to be eternally defied, and in the hour of his disappointment he whined and wept and made a pathetic admission that he never knew that outside a novel a man could shed tears for love.

Yet in spite of such facts Freudianism does not fail to appear exaggerated and crude and even monstrous to our average common sense and it is easily intelligible why morbidity has come to be associated with Freudianism as the psychology of the abnormal. But in justice to Freud it has to be made clear that the sexuality he speaks of stands for a far wider range of facts than its general every day use. It is in a way most unfortunate that Freud emphasises the term so much, when it is clear from his works and as is explained by his followers that sexuality is “practically synonymous with the word *love*” and stands for “all those tender feelings and emotions, which have had their origin in a primitive erotic source, even if now their primary aim is entirely lost and another substituted for it.” \* Further, the term includes not only the physical side, but also the psychical side of sexuality, *e.g.* while we normally recognise the period of infancy as one of sexual innocence, Freud traces in it a marked

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\* P. xvii, Introduction by Beatrice M. Hinkle to Jung's *Psychology of the Unconscious*.

kind of sexuality, capable of having life-long effects. An infant's suckling is regarded as sexual, and thus one of the purest acts of human love comes to suffer from the associations, legitimate and illegitimate, of sexuality. Or again children's love for their parents is dealt with under the ominous names of Oedipus and Electra complexes, a fact which is explained by the incestuous leanings of many a neurotic patient of Freud. But to generalise from this that the Oedipus and Electra complexes are an ordinary endowment of every human being is indeed going much farther than is warranted by facts. The general view that daughters display a marked preference for their fathers and sons for their mothers has been developed even by writers like Dr. Stanley Hall, but the exceptions to this general rule—if it can be called a general rule at all—are also as marked and numerous as they can be, and any attempt to explain these on the analogy of homosexuality can only be regarded as a *tour de force*, as an astute attempt to bolster up an untenable theory. If, however, by these complexes Freud means nothing more than the love which children usually bear to their parents, he must be absolved from the charge of grossness often levelled against him, but not from the charge of using language that is markedly misleading.

It is from this stand-point that Jung's views and his formulation of them are much more consonant with our normal outlook on life. Substantially he attaches the same importance to sexuality as Freud as when he writes: "It can be a surprise only to those to whom the history of evolution is unknown to find how few things there really are in human life which cannot be reduced in the last analysis to the instinct of procreation."<sup>\*</sup> But what distinguishes him from Freud is that he does not confound the origin with the product. He writes very sanely: "Thus we discover the first instincts of art in animals used in the service of the impulse of creation, and limited to the breeding season. The original sexual character of these biological institutions became lost in their organic fixation and functional independence. Even if there can be no doubt about the sexual origin of music, still it would be a poor unæsthetic generalisation if one were to include music in the category of sexuality. A similar nomenclature would then lead us to classify the cathedral of Cologne as mineralogy because it is built of stones."<sup>\*</sup> In a nutshell Jung's conception of libido is primarily sexual but involves also "an amount of desexualised primal libido," e.g. the protection of the young. This process of diverting the primary sexual libido into associated functions is continually taking

\* Jung's *Psychology of the Unconscious*, p. 145.

place. "Where this operation succeeds without injury to the adaptation of the individual it is called *sublimation*; where the attempt does not succeed it is called *repression*." \*

This mode of formulating the nature of libido frees Jung from the awkwardness of confounding sexuality with its associations and the Oedipus and the Electra complexes lose all their tragic significance. Freudian theory has much in it which can be justified, but his language is misleading, and so Jung has rendered a distinct service to the psychology of the unconscious by his conception of a genetic libido. If we keep in mind this weak side of Freud, there is no danger of being misled by his views, while we shall be in a position to appreciate the greatness of his achievement as a neuropathologist and as a psychologist. The concept of repression enabled him to discard the one-sided and interested pronouncements of conscious life, and by making an astute use of dreams, phantasies and word associations he was able to dive so to say into the very heart of the unconscious and force its innermost secrets out. Nothing succeeds like success, and the theory of unconscious life so utterly at conflict with the established traditions and highest conceptions of European philosophy has succeeded in converting even the sceptical into convinced believers in the existence of the unconscious. The psychology of neuropathology is considerably the psychology of dreams, which subject we shall now proceed to discuss.

#### IV.

In literature as in ordinary life a dream has been generally regarded as something unsubstantial and shadowy. Sometimes a dream that has acted as a forecast of coming events has been endowed with a weird, almost fearful, fascination. But the learned brushed this aside as the lingering vestiges of a decaying superstition. Such an attitude, however, either of complacent superiority or ignorant indifference is no more possible after the epoch-making work of Freud: "The Interpretation of Dreams." The interpretation of dreams as carried out by Freud has no reference to the future, as we find in the Old Testament and in many an Indian story. It has rather a reference to the past and a present dream is sought to be interpreted in terms of the dreamer's past experiences. We have already noted before that a dream has now been known as the language of the unconscious, apparently incoherent and meaningless, yet possessing a key to unlock its secrets so that dream language, although much more difficult, is not much more meaningless than shorthand symbols. We have also seen that the unconscious comprises a

good deal of what we have forgotten either through indifference or repression. In other words the unravelling of a dream always implies the risk of unearthing some buried secret of the heart. Hence it involves no little courage in a man to expose his dreams and explain them withal as Freud has done, and it speaks volumes for his pure scientific spirit that he has not hesitated to engross his personality and thereby court the sneer that Freudianism is only Freud himself. One can easily understand the pang with which he must have penned these words, although in a passing way: "I think of the effort it costs me to publish even my work on the dream, in which I have to surrender so much of my own intimate character."\* Freud has broken such new ground, and shed so much light on an obscure problem, and made as important discoveries as any in the history of science, that none with any claims to speak can venture to deny the epoch-making nature of Freud's masterpiece. Of course there are detractors. Only a couple of years ago a correspondent in the Times of India had the temerity to speak of Freud as a charlatan, but he had a spirited answer from an I. M. S. Officer, who justified Freudianism as a scientific and most successful method of dealing with neurotics. It is impossible to say "Yea" to everything that Freud may say. It is possible to disagree with even his fundamental views. But that cannot affect the worth of his work, just as Darwin's preeminence as a biologist cannot be challenged merely because the present day biologists have outgrown the Darwinism of the Origin of Species; and Newton's fame and worth are not absolutely annihilated because Einstein has started new theories.

Freud's theory of dream may be briefly summarised in his own words: "The dream is the (disguised) fulfilment of a (suppressed, repressed) wish."† So put, it appears most paradoxical, so palpably opposed to our ordinary consciousness as to deserve a summary dismissal as absurd and phantastic, or as a lay critic‡ in a Bombay daily has ventured to call it "this fashionable and unclean imposture." But these self-complacent critics are guilty of criticising this statement just by itself, when in fact it constitutes but one factor in a complex organism. To understand it clearly, Freud's statement had better be analysed into its two main factors: wish (open or repressed) and its fulfilment (open or disguised).

(1) That at least *some* of our dreams are really wish-fulfilments cannot possibly be denied. The dreams of children with their charming

\* P. 359, *The Interpretation of Dreams*.

† *The Interpretation of Dreams*, p. 136.

‡ *Venus Victor* in the Times of India of 27 June 1922.



naïveté, are mostly of this character. A child craves for a banana, and any disappointment notwithstanding, it may dream of eating a banana. What disciplining parents deny, it gets in dreams. Even in adult life the erotic dreams are often the off-shoot of conscious desires and the prizes that appear beyond the reach of our consciousness easily fall into our laps through the benignity of dreams. But the critics retort: what about the nightmares, what about those horrid dreams wherein we dream of the death of our near and dear ones, sometimes find ourselves killing them or being killed by them?

Freud would argue that a wish can manifest itself in various ways. It is well-known how varied and at times contradictory forms love can take. A purposeful desire to avoid the presence of the beloved is as much a sign of love as a desire to adore the beloved in person. So too with a wish. A really intense wish is always pursued by the shadow of some fear. I have never had a wish which was not also tinged in the hues of fear, and sometimes it does actually happen—as is attested by Baudouin's law of reversed effort—that the fear preponderates over the wish, and a wish to gain a prize may manifest itself in a dream in the form of losing it.

Not content with this, Freud could still further argue that a wish may pass away from consciousness and yet leave its impress on the unconscious. Here comes in the psychology of forgetting, which we have already referred to. We have seen that forgetting is a concept of practical convenience and that in reality there is no absolute forgetting. All that has been experienced becomes *ipso facto* a permanent endowment of our memory. We may conveniently refer at this stage to some interesting examples cited by Havelock Ellis\*. An English maid servant was taken to Paris for a few weeks, and although she knew not a word of French was overheard talking in her sleep and repeating various French phrases, like "Je ne sais pas, monsieur." A patient in a light condition of chloroform anaesthesia began to speak Welsh, a language which she had known as a child, but had long since forgotten. A similar case is mentioned of a Countess of Laval, "who during the delirium of illness, spoke the Breton language which she had known as a child but long since forgotten." Dr. Havelock Ellis mentions an interesting dream of his own. He dreamt that he was in Spain and was to meet some friends at Daraus, but when he reached the booking-office he could not remember whether he wanted to go to Daraus, Varaus or Zaraus. When he awoke he could not remember ever having seen or heard of such places. Some months later he found there was a place like

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\* Havelock Ellis: *The World of Dreams*, pp. 223—226.

Zurauz and that he had passed through this very place two hundred and fifty days before his dream. Evidently he had not thought it worth while to remember this, but his unconscious memory had not failed to retain it and made itself manifest in a dream.

If our memory be really so tenacious, as there seems to be no reason to doubt, is it so incredible that a wish lightly formed may lightly disappear from our consciousness, yet not without leaving its foot-prints behind? How often in the course of a day does not our mind become a stage for ideas, absurd, impossible, disgusting, ideas which come through sheer perversity, ideas which are in us, but which we whole-heartedly repudiate as disgusting and unclean? What wonder if these ideas, wish phantasies, recoil on our heads in our dreams? Here again is to be found an explanation for dreaming things which our consciousness never hesitates to disavow. To dream of the death of one's own mother! How hideously unfilial, and yet in the world of dreams not at all unnatural or unknown. A mother is ill, and her son wishes her to live, but dreams of her death. What is this but to dream of the fear allied to the wish? Or a child is naughty and is chastised by the mother, and in a fit of petulance it wishes the mother were no more and years later when this incident is completely forgotten by the conscious memory comes the dream of her death. Verily the law of *karma* reigns in the world of dreams as in the world of overt actions.

If it be asked: how is it that memories, which we have discarded as useless or repudiated as painful, yet make their appearance in dreams? we may answer in terms of the "censor," as Freud puts it: "The sleeping state makes dream formation possible by diminishing the endopsychic censor."\* From the stand-point of conscious life, there is a certain amount of justification, though it is generally grossly exaggerated, in defining man as a rational animal. Our reason serves as the censor of our thoughts and actions alike. Those thoughts which arise so to say in spite of ourselves naturally tend to be repressed by reason. Very often reason succeeds in this, at other times it gains only a pyrrhic victory, for it produces such a tension and dissociation as to give rise to neurotic troubles and even to insanity. In either case the repressed thoughts have no clear field and can have only an underground existence. In sleep, however, reason as the censor slumbers, and even the forbidden can raise its head. But on awakening the censor asserts itself and the free play of dreams tends to be rapidly forgotten. That is why we have only a vague sense of

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\* *The Interpretation of Dreams*, p. 416.

what we dream, and even in the case of most vivid dreams, the details rapidly disappear, leaving behind only a sense of some determinate point or two.

Another characteristic of dreams observed by many is that a dream is very often stimulated by very recent events, mostly even of the day preceding. This is noted by Freud as well as by men like Dr. Havelock Ellis, who refuses to be known as a Freudian. From this it might be argued that dream has nothing to do with the so-called unconscious, it is merely a fantastic presentation of recent experiences, devoid of any particular significance. Freud does not by any means pretend that each and every dream is perfectly capable of an interpretation. In fact in one place\* he definitely says: "The question whether every dream can be interpreted may be answered in the negative." But he does assert that dreams have a significance, and it is very often possible to get at this significance. He distinguishes between the motive of a dream and the presentation of it. The latter makes a free use of recent events in conscious life, while the former is—often, though not always or necessarily†—supplied by the unconscious. It is in this connection that he speaks of the regressive character of hallucinatory dreams, which I shall briefly explain. The foreconscious is so to say an ante-chamber to consciousness. The foreconscious stores impressions which are taken up without any difficulty by the conscious. But the way from the unconscious to the foreconscious is barred by the censor. So what happens during sleep is that the activity of the unconscious is aroused and manifests itself by manipulating recent experiences to suit its own object. Freud even speaks of the foreconscious thoughts playing the part of an *en'repreneur* in the dream, while the real sinews of the dream are supplied by the unconscious. This is what Freud calls the regressive character of dreams. Just as while trying to recollect a forgotten name our memory retraces its steps, so too in a dream the foreconscious is made to retrace its steps to be used by the unconscious.

Thus we see that the general thesis of a dream centring round a wish is neither impossible nor incredible when studied closely in relation to the psychology of the unconscious as a whole. To those who deny the very existence of the unconscious, we can only point to the phenomena of hypnotism, somnambulism and the like, and ask if they can explain them in terms of anything but the unconscious.

(2) The second point to be noted in Freud's formula: "The dream is the (disguised) fulfilment of a (suppressed, repressed)

\* *The Interpretation of Dreams*, p. 415.

† I am not sure if Freud will accept this proviso, vide p. 429 and p. 435.

wish" concerns "the (disguised) fulfilment." If we appreciate the fact that our wishes can be unconsciously cherished out of deference to the censor of our waking thoughts or the customs and conventions of our social life, it will not be difficult for us to realise that such a wish may manifest itself in very devious ways. Hence arises the symbolism in dreams and hence too the necessity of interpretation. Dr. Havelock Ellis, who, as noted above does not wish to be known as a Freudian, as much as Freud, declares that "there can be no manner of doubt that our dreams are full of symbolism," though he recognises that "when we are faced by the question of definite and constant symbols it still remains true that scepticism is often called for."\* We may note here a few examples of this symbolism. Dr. Havelock Ellis notes a dream of a medical friend that in conversation with a lady patient his hand rested on her knee; she asked him to remove it, but he couldn't do so; he awoke in horror from this embarrassing situation only to find his hand firmly held between his own knees.† Freud mentions a dream on p. 241 of his *Interpretation of Dreams*, which he interprets as a case of sexual symbolism. In his recently published *Introductory Lectures on Psycho-Analysis* (pp. 100-101), Freud mentions some instances of symbolic distortion of dreams, e.g. "The dreamer was pulling a certain lady of his acquaintance out of a ditch. . . . It meant: he picked her out and preferred her." "Another man dreamt that his brother was digging up his ground all over again," meaning that his brother was retrenching.

This much may suffice to show that Freud's dictum we have been so long discussing is not necessarily absurd or meaningless, though it may be open to criticism from other stand-points. We have already seen that once we interpret the word "wish" to include also the fear and anxiety which are almost invariably connected with it, the idea of dream as a wish fulfilment loses its paradoxical character. But it may be reasonably objected that such a wide usage of a common term leads to confusion, and that no word should be used except in its normal sense and hence Mr. Tansley suggests (p. 127) that Freud's wish-theory needs a broader statement. His view is that "a dream is a more or less altered re-production of psychic material at least partly derived from recent experience, sometimes very fragmentary and difficult to explain causally, but often representing a complex carrying a marked effect." If a complex is predominantly affective, as a wish too undoubtedly is, Tansley's meaning is not essentially different from

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\* *The World of Dreams*, p. 159.

† *Ibid.*, p. 180-1.

Freud's, though his statement has the merit of being sufficiently technical to escape the danger of popular misunderstanding.

Apart from this more or less verbal dispute, the chief point challenged in Freudianism is its characterisation of wish-fulfilment as sexual. We have already dealt with the significance of sexuality in Freud, and therefore there is no need to traverse the same ground over again except in so far as is really necessary in connection with dream psychology. Freud never fails to insist \* that there is no dream which is not to at least some extent distorted, i.e. there is no dream which is a simple reproduction of some conscious experience. Some incident especially in our recent experience may form part of a dream, but it is always distorted in some form or another, and the point which Freud urges with great ingenuity, if not very convincingly, is that this distortion conceals a sexual wish. In his Introductory Lectures he devotes four † pages to a mere enumeration of objects dreamt of, but which are symbolical of sexual life, not in its broad, but in its every-day sense. The list is so long and exhaustive that the most innocent-looking dream may thus come to be interpreted as grossly sexual. If asked how it is that such objects come to be treated as sexual symbols, Freud answers: "from fairy-tales and myths, jokes, and witticisms, from folklore, i.e. from what we know of the manners and customs, sayings and songs, of different peoples, and from poetic and colloquial usage of language." ‡ I think there is considerable force in this symbolic argument of Freud, but absolute conviction on this point is well-nigh an impossibility, and it is possible and necessary to discuss whether assuming the existence of sex symbolism in dreams, all dreams are to be interpreted as sexual. In more than one book and one article I have come across the idea that Freudianism essentially implies a sexual interpretation of all dreams. Such an interpretation would be so palpably narrow and absurd, that if Freud had really developed this view he would have really deserved all the serious criticism and the popular ridicule to which he has been subjected. But it is most refreshing to find Freud unambiguously declaring his position in his Introductory Lectures. § "You will certainly have heard it said at some time or other that psycho-analysis maintains that all dreams have a sexual meaning. You are now in a position yourselves to

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\* e.g. p. 97 *Introductory Lectures on Psycho-Analysis*.

† *Ibid*, p. 129-133.

‡ *Ibid*, p. 133

§ *Ibid*, p. 162. A similar idea is expressed on p. 241 in the *Interpretation of Dreams*.

form an opinion as to the falseness of this reproach. You have learnt of wish-fulfilment dreams, dealing with the gratification of the most obvious needs—hunger, thirst, and the longing for liberty—comfort-dreams and impatience-dreams, as well as those which are frankly avaricious and egoistical. You may, however, certainly bear it in mind that, according to the results of psycho-analysis dreams in which a marked degree of distortion is present *mainly*, (but here again not exclusively) give expression to sexual desires." So we find wish-fulfilment is not at all necessarily sexual, and in this case Freud's position approximates very much to that of Jung. Psycho-analysis has developed in the West and is based on experience in the West. Considering the freedom of movement open to both the sexes in the West, and considering the extreme flippancy of dress and manners often affected especially in large European cities, there is no reason to doubt that dreams may really be "mainly" sexual. Whether it would hold true of the East as well may be left an open question, though here again the general presumption of the similarity of human nature would tend to an identical conclusion.

Some of the other points worth noting in Freud's treatment of dreams may also be noted. One point is the infantile regression in dreams. We have seen that dreams are the language of the unconscious, and the unconscious often results through repression. Our infantile life is brimming with the innate energy of instincts, which are strangers to what we call decency or morality. This initial crudeness has to be kept in check and this is done through the pressure of education and civilised modes of life. As a result there issues a conflict between what we would like to do and what we ought to do, and in this struggle the former tends to be repressed. But it continues to exist, and hence when an adult wish is thwarted by the censor, it may take up some infantile form and thus cause an infantile regression.

Another interesting view developed by Freud is that dream is not a disturber of sleep, but really its protector. This is sufficiently borne out by those dreams, wherein we dream that we are thirsty or hungry and proceed to satisfy our thirst or hunger as the case may be, but only in dreams! A short time ago I myself had an interesting dream of this sort. One night my sleep was disturbed by the banging of a window. I felt too lazy to get up and fasten it; I quietly went to sleep, and I dreamt that the window was banging—occasioned no doubt by an actual banging—and that I got up and fastened it. But when I awoke in the morning I found the window banging just as much as ever. It is not difficult to understand that such dreams, even if not all

dreams, are *par excellence* dreams of convenience. Palpably they are devices, and often very successful too, to negate a cause of disturbance by pretending that it has been set right and thus avoiding the necessity of disturbing sleep. In short such dreams serve to protect sleep, and not to disturb sleep. But a question arises whether it is really the nature of a dream always to be a guardian of sleep.

Against this sweeping generalisation, it might be urged that nightmares and anxiety dreams are always disturbers and not guardians of sleep. Freud has again an ingenious explanation for this apparent exception. We have already seen that all dreams are distorted, and especially those which exhibit Freud's distinction between the manifest and the latent dream content, *i.e.* those which express an unconscious wish. It is the censor's opposition that the unconscious wish has to overcome and it is in deference to the censor that it has to manifest itself in a distorted form, *i.e.* even during sleep there is a certain conflict going on. Generally during sleep the censor is not very active and hence the conflict is not severe, but once the censor begins to assert itself and thwarts the manifestation of the unconscious, the conflict becomes keen and painful. As soon as this point is reached it becomes better that such a painful sleep be disturbed and make room for a quieter sleep than that it should continue, and thus paradoxically enough even a painful dream indirectly serves the purpose of protecting sleep.

It would indeed be futile to claim that Freud has said the last word on the nature or interpretation of dreams. But it would be no exaggeration to say he has struck a new vein in the history of European philosophy by demonstrating to the best of his ability that dreams have a meaning, and through the study of his dreams a neurotic can be cured. A critic of Freud has sought to challenge the whole superstructure of Freudianism in a very ingenious way. He regards dreams as being really meaningless, and if neurotic patients accept a particular interpretation of their dreams and thereby assist the psycho-pathologist in his cure of them, he attributes the success purely to the effects of suggestion on the part of the psycho-pathologist. The explanation is ingenious and plausible, but hardly fits all the cases. More often than not the psycho-pathologist by his study of dreams does not aim at any particular interpretation at all, but simply seeks to get at facts buried in the unconscious which may serve to explain the dreams. It is a trait most commonly found in conscious life that our conscious thoughts generally tend to centre round the dominant interests of our life, domestic and professional, or the dominant

interests of the moment, *e.g.* an unexpected success or an unkind word. Hence if the unconscious exists at all, it need cause no surprise if its dominant interests also tend to manifest themselves in a way open to them, *e.g.* in dreams. But there is also another fact which makes the critic's explanation unsatisfactory. Quite apart from the meaning of distorted dreams there have been on record prophetic dreams which picture an event in its entirety before it has actually happened. Such dreams have undoubtedly a meaning, but a meaning so clear as to render any round-about interpretation utterly superfluous. An interesting dream of this sort has been mentioned by F. W. H. Myers in his "Human Personality and Its Survival of Bodily Death" on p. 370. It is a dream of the Duchess of Hamilton dreaming a fortnight in advance of the exact death scene of an Earl of L——. She dreamt that the Earl was "in a chair, as if in a fit, with a man standing over him with a red beard. He was by the side of a bath, over which bath a red lamp was distinctly shown." A fortnight later this scene in all its details actually took place. Such a dream is by no means an isolated case, for many others have been recorded. The question is how are these prophetic dreams to be explained? Freud himself devotes the last paragraph—a tiny one—of his masterpiece to dreams of this sort, only to suggest that in connection with dreams we ought rather to look for a knowledge of the past and not of the future. Dr. Walsh too in his *Psychology of Dreams* airily brushes away such dreams. But dogmatism is not science, and prophetic dreams furnish a palpable limitation to Freudian interpretation, and still need an explanation which cannot be purely Freudian.

The general conclusion to which a broad study of dreams drives us is that dreams are too complex to be explained by any one formula. They may relate to the conscious primarily as much as to the unconscious. They may be occasioned by organic sensations like thirst or hunger, or the difficulties of respiration, or some external stimulus like the bed-sheet or the rays of sun. But these causes do not adequately account for all dreams and certainly do not justify the exclusion of the unconscious. It may be that as a pioneer Freud especially as a pathologist in places over-emphasises the unconscious, but as he himself says: "Indeed, in general, it doesn't often happen that psycho-analysis contests anything which is maintained in other quarters; as a rule psycho-analysis only adds something new to what has been said."\*

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\* P. 35 *Introductory Lectures*.



## V.

If Freud had confined himself to the study of the unconscious as manifested in dreams, he would have—to use the good old Roman phrase—deserved well of the republic. But he is nothing, if not thorough, and his studies have extended to the whole range of the unconscious as manifested in the taboos\* of barbarous and civilised life, and even in the errors and slips of our everyday life†. There is not space enough in this essay to deal adequately with Freud's work in these departments, so that we can do no more than mention it. Suffice it to say that in these works Freud seeks to establish the following conclusions with a wealth of illustrations to which no summary can do adequate justice.

(1) The taboos represent a safeguard against primitive tendencies which are anti-social in their nature, and the very stringency of the taboos represents the strength of the tendencies tabooed.

(2) Forgetting is only relative, and the unpleasant tends to be repressed, but the repressed works in the unconscious memory. Forgetting is also a sign of indifference.

(3) Our errors, which we usually explain away as mere slips of tongue or of pen are made by Freud to have a deeper significance as really manifesting our innermost, though unconscious, thoughts. It is possible to over-emphasise the significance of such slips in this fashion, yet a little honest self-analysis goes to show that Freud's conclusion in this respect has a great deal of truth.

(4) Still another sphere in which the workings of the unconscious make themselves felt is that of day-dreaming or phantasy or autistic thinking. Freud himself has been long conscious of this, but the task of studying it in detail has fallen to the lot of a Belgian, Dr. J. Varendonck. His work on "The Psychology of Day-Dreams" is not a mere translation, but it is written originally in English. It is an astute study of day-dreaming with its detached self-centred, sometimes logical and sometimes illogical, wayward imagination, in which a man takes refuge and satisfies his ambitions in dreaming what he cannot, or has failed to, achieve in real life. Perhaps this study suffers from the fact that Dr. Varendonck has predominantly emphasised only his own day-dreams, and thus his interpretations may be as much the cause as the effect of his views. But it cannot be denied that he has succeeded in showing that "like nocturnal dreams, day-dreams betray pre-occupations with unsolved problems, harassing cares,

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\* Freud's *Totem and Taboo*.

† Freud's *Psycho-Pathology of Everyday Life*.

or overwhelming impressions which require accommodation, only their language is not as sibylline as that of their unconscious correspondents." In many ways day-dreaming has a unique worth as displaying a man's inner nature, freed from the conventions of life and free to build castles in the air, which have anyway the merit of showing in what grooves the thought of a man seeks to run. Our conscious thinking is the result often of our practical needs and problems and imposes on itself a strict conformity to the hard facts of our environment. In dreams we have an outcropping of the unconscious, whose significance we ourselves miss and often are sincere in repudiating its manifest content as having anything to do with ourselves. But in day-dreams we transcend a prosaic environment, and give a free rein to our cravings, which, however immoderate and unreasonable they be, are not yet totally repudiated by us. Therefore Dr. Varendonck's work is indeed a most valuable contribution to the psychological literature of to-day.

## VI.

So far I have been discussing the unconscious only from the psychological stand-point, but considering the most intimate relationship which exists between psychology as the science of human experience and every other science which has anything to do with human life, it cannot but be that the discovery of the unconscious should have a marked effect in many directions. I had hoped to deal with this at some length, but the length which this article has already reached forces me to content myself with a few tentative suggestions, deferring a detailed treatment to some more convenient opportunity.

I think that without any risk of exaggeration it may be asserted that the existence of the unconscious testifies to the enormous and baffling complexity of human nature. The crude simplicity of the dogma of "*homo sapiens*" has been overthrown, and to this extent criminology, pedagogics, and ethics have been made less unbending and so more humanised in their outlook. The view that every criminal is *per se* a pervert, a thorough enemy of society now hardly finds favour, and the experiences of childhood buried in the recesses of the unconscious may furnish springs of action which are inscrutable to the prosecuting police or the trying magistrate. So too in the domain of pedagogics the birch has been seen to be the harbinger of as much evil repression as of good. In ethics we have been in the habit of taking at their face value the reasons assigned for this or that action, and yet we have found that the rationalisations may be mere cloaks for motives which won't bear a critical examination. But perhaps for this very reason psycho-analysis

both as a method and as a theory has been a source of prolific, though irrelevant, jokes from popular journalists. It has been, however, a much more serious charge that psycho-analysis has popularised a degraded view of human nature and taken away from it that stern sublimity which has been the most potent inspiration of the loftiest human souls. If this charge could really be established, we should be constrained to admit that the truth of psycho-analysis, if it be a truth at all, is too dearly purchased. The actual fact is that through ages past and in all countries the highest morality has had to battle with various innate forces of life, which it has not always been able to combat, and so self-complacently branded as low. Further if human nature were in itself good, by now at least after centuries of civilisation and a high code of life, masses of humanity would have risen to great heights. But the curse of a low life, a weak vacillating will, a sickly will which has not even the strength of sincere repentance, still clings to the brow of humanity, and it shows that human nature is not good by any easy birth-right, but that it has to achieve goodness. Psycho-analysis does not negate the idea of this achievement, but it does not believe that ignorance of the basic facts of life or a pretended ostrich-like prudery is ever conducive to a genuine morality, nor is it true that psycho-analysis is necessarily pledged to a cynical view of life. Far otherwise, as its conception of sublimation sufficiently proves. Its whole aim is to destroy the corrosive influence of repressions and to utilise this liberated energy for the pursuit of higher and more moral ends. An inflammable youth under the crushing weight of a disappointed love may grow a neurotic, but it is equally possible for him to immortalise his disappointment in song or stone or canvas, or, it may be, the energy of his love is sublimated to a love for his country or a passionate devotion to the interests of humanity.

Nor in a critical valuation of psycho-analysis must we omit to mention that the unlocking of the mysteries of the unconscious has been also the means of unlocking the hidden sources of myths and poems, and he who fails to appreciate the potent influence of these myths and poems on men can only be regarded as one who is merely skirmishing on the fringe of life and has not penetrated to the core of life. Ludwig Laistner is regarded by Dr. Havelock Ellis as having been the first to see what an important part dreams have played in the evolution of mythological ideas. "If we bear in mind," writes Laistner, "how intimately poetry and religion are connected with myth, we encounter the surprising fact that the first germ of these highly important vital manifestations is not to be found in any action of the waking mind, but in sleep, and that

the chief and oldest teacher of productive imagination is not to be found in the experiences of life, but in the phantasies of dream."

As students of philosophy we are naturally most interested in the question whether the discovery of the unconscious has had any influence on the trend of metaphysical thought. So far to my knowledge no such influence has been at all exerted. But metaphysical views of thinkers do not easily change, still less do they make any immediate response to new discoveries. But such a response is bound to come, as every important psychological discovery has never failed to affect metaphysics, and we may hazard a few sentences to the probable direction this influence may take. It seems to me that the discovery of the rationality of dreams essentially strengthens the foundations of idealism, though the statement of idealism will need many changes as rationality has now come to be seen to be much wider than the narrow and dogmatic rationality of our waking life. Further, dreams are now seen to have a definite significance, and so far cease to be mere phantasies. They have a reality not merely in the sense that they exist, but in the sense that to the dreamer the dreams are real at least so long as they last. How does this affect our view of life itself? May it not be as real or as unreal as a dream itself? The answer will again depend on our individual temperaments and metaphysical leanings. The analogy of a dream is a handy instrument in the hands of those, a class exceedingly well represented in India, who look upon this world as a mere soap-bubble manifestation of some eternal entity, whose nature transcends to infinity anything that we mortals can experience, and is an eternal mystery that our reason is for ever barred from penetrating. To the metaphysicians of this school the analogy of dreams supplies an unanswerable argument. Like the famous myth of the den in Plato's Republic, which seeks to show that sensible objects are real only to those who have not experienced the illumination of philosophy, and conversely the Ideas are unreal only to those who have never experienced anything but shadows, the analogy of dream may point out that it is impossible to prove to a dreamer while he dreams that his dream is only a shadow and that it is only in contrast to his waking experience that he realises the shadowy nature of his dream; so too only he who has had a vision of the eternal will be able to recognise the ephemeral shadowy nature of the whole universe that makes such a tremendous appeal to our senses and our human reason.

But I am not sure if this is the only use we can make of dreams in our metaphysics. Is it not possible to argue that if dreams have a meaning they cannot be absolutely unreal? If Robert Louis Stevenson

found in his dreams a never-failing source of plots and incidents for his stories ; if Coleridge could write his *Kubla Khan* in a dreamy mood ; if mathematicians find their problems solved in dreams ; if lost articles can be traced through dreams ; and if experiences long since lost to our conscious memory can yet assert themselves in dreams ; is it possible to argue that dreams have only a transient life ? If dreams affect our life just as much as our waking experiences ; if the law of *karma* reigns in the world of our dreams as much as in the world of our waking consciousness, surely it should be possible to hold that in the universe nothing is unreal. Everything is a stepping-stone to the eternal. Assuming that the Eternal is the Real and the very fountain-head of all reality, how can that which comes from the Eternal Real be itself unreal ?

Enough for the day. One is tempted to play the role of Kant in his *Dreams of a Ghost-seer*. But after Freud dreams cannot be to us what they were to Kant, and the subject demands a much fuller and more reverent treatment than has been possible on this occasion.

A. R. WADIA.

## BARYMATH AND BRADYMATH.

(A REMARK of Mrs. Besant in relation to the new Madras University Bill is worth consideration by those responsible for English studies. She considered that English classics should not be treated as text-books, and that more of them should be read. This course was urged two years ago in an article in this magazine. It has never been brought forward for discussion in this university, but it ought to be discussed now, when a general scrutiny of studies is proceeding. It is a good debating topic, for in the change we would propose there is difficulty, even considerable danger, and there might well be strong opposition in very competent quarters. Let us therefore conceive a debate between Bradymath, who desires to broaden English studies, and Barymath, who commends the rigour and heaviness of "detailed study." This University fortunately contains no such Barymath as this, yet the influence of the Barymath doctrine is felt everywhere.)

Barymath.—I hear of you, sir, that you seek to destroy the definiteness and the discipline that have been for so many years the glory of our English studies. I view not merely with dislike but with contempt your somewhat characteristic proposal, which—I beg leave to tell you—is ruinous equally to scholarship and to mental and moral discipline.

Bradymath.—I am all gratitude and attention. Pray enlighten me as to the injury.

Bar.—You would double—or treble—the number of English books prescribed.—I pause to think of the outcry that would arise against you. But perhaps you do not seek popularity.

Brad.—I would fain have it. It is pleasant to be liked, and disfavour gives me uneasiness because it convinces me of failure. Yet I am unwilling to hold the favour of our students by continuing to do them injustice.

Bar.—You would sacrifice popularity and justice together. And indeed I have frequently remarked in you the tendency to unseemly rapidity in your work. Words are too little to you: you lack the instinct of the scholar, and forfeit his delights.—Let me point you to a pleasure. You are expounding, let us say, a play of Shakespeare. This I suspect you of doing by the delusive light of nature, though what kinship you may discern between yourself and Shakespeare (whose

vocabulary is triple yours) puzzles me to discern. Observe my method—financially expensive, it may be, but profoundly satisfying. Of each play of Shakespeare which I expound I purchase at least five editions—all, in fact, that are available, except the Variorum edition, which I borrow from the library. Conceive my exercise. On a wide-spread desk in my study I display conflicting annotations. Persons of your stamp have no idea how intricate, how fascinating, the conflict may become. The genius of Shakespeare, to my mind, rests chiefly upon this, that by a heedful ambiguity he stimulates the rigid and discriminating judgment, fosters the fertility of the conjectural imagination. This is his subtlety, this his suggestiveness. As I stand before my editions, verging from Verity on my left to the glowing enlightenment of Deighton on my extreme right, my spirit knows an unwonted expansion, I expatiate in the life of vision, and, as I make decision between Verity and Deighton, I am at one with, yet above, these mighty spirits, and in myself a scholar. This delight I impart to my class; and if rapture seem lacking among them, I remember that these are but their first steps: they have far to go, and enlightenment will doubtless be the end. Discipline, at all events, is the beginning. I train their judgment and accustom them to labour,—for which, in years to come, they will hail me benefactor. Oh, Bradymath, dear friend, will you not share my habit and my joy?

Brad.—With much ado I have shaken off your habit, yet still my lower nature craves your joy. You speak of words, and love them—or rather it is not the words you love but their eventful history, and the nice distinction between one and another. You love precision; you hold accuracy in itself an end, because a discipline and exercise. Alas! so do I. In this love I have suffered much, and suffer still. This special martyrdom is Oxford's gift to her children—not the least of her gifts. Happier (and less happy) are they who were nurtured in Cambridge or the provinces. For me, correctness is a passion, and the love not merely of the word but of each letter in it an ensnaring joy. It was not thus till Oxford claimed me, and when I read now my earlier effusions—but enough of this. I had a tutor there (of whom I would think rather than of myself), a man of a free creative spirit. Too early, alas! had Oxford laid hold upon him, and the end of the matter was that genius remained speechless, this man of letters dared not write. He could not satisfy his verbal conscience. His admirable words tormented him, for imperfection ever tainted them, and cross-currents of significance, which others would not discern, swept across his sentences. He was paralysed, and his work was not done. As with the great, so with

the small; and we from Oxford find it hard to emancipate ourselves from the delaying niceties of choice. Thus your doctrine, far from being strange to me, is my temptation: to your deity I have offered many an unprofitable sacrifice. Let us not, however, maintain his altar here, seducing thither unwilling worshippers.

Bar.—I know your doctrine. You also I know, and your practices. Whatever your past, your present cheapens learning. Your vice is vagueness. You love abstractions and generalities. You complete nothing. You know no thoroughness. You prefer suggestions to realities. Whether through laziness, incapacity or sheer wrong-headedness I know not, but you deal in fragments, never proffering the well-rounded whole.

Brad.—“Fools!” cried Hesiod of the unworthy who filched from him much of his inheritance; “fools: they know not how much greater the half is than the whole.” How often have I pondered these words, in which that great poet, as is the way with such, builded better than he know, and fashioned for us a figure of all life and happiness. I know not whether mathematics is to you the literary paragon: precision and completeness will, at all events, rejoice you there. Of literature, and its knowledge and wisdom, I cannot think thus, nor limit thus its power. Do you not think that, by some strange inversion, that which can be known completely is the less worth the knowing? That in the subtlest matters, and in the highest, precision eludes humanity, and suggestion must assume definition’s place?—I cannot but think that you confound the values of different kinds of truth, and also of different kinds of imagination. To arrive at sure decision as to Shakespeare’s precise wording in a given passage is to arrive at truth; and though his meaning may never have been in doubt, and though neither beauty nor power may have depended on the chosen alternative, yet truth is truth, and ever worth finding. But to make the search for such truth one’s prime pursuit is as unwise as incessantly to divert attention from the sublime poetic imagination of Shakespeare to the conjectural imagination (more inventive, it must be confessed) of his emendators. And indeed the noblest truth is reached only by the noblest imagination. Such is Shakespeare’s truth, the understanding of which is the chief object of our Shakespeare classes. To our students it is welcome. Their faces light up at the sight of it. You may be as jocular with them as you please about your verbal processes, passing the time not too unpleasantly—but you will not see *that* light.

Bar.—I begin to see signs of sense and virtue in you, mingled with your undeniable follies. I apprehend, however, that your theory is more



excellent than any practice of it can possibly be ; that, in endeavouring to interpret Shakespeare—to communicate the virtues alike of drama, of poetry, of thought—with a considerably increased number of plays as your data, you will in the first place fail in imparting that mental discipline which, as even you will admit, results from even a moderate amount of such lecturing as I have advocated ; and in the second place you will find it impossible to provide an adequately systematic treatment of the necessarily theoretic and ideal matter which will be your business. Pardon my insistence ; but you must have observed that vagueness is a tendency among our pupils. Will you not at once lose a valuable opportunity for its correction and positively encourage it by the nature of your themes ?

Brad.—I think not : I have not found it so. Do not imagine that I advocate the abolition of verbal studies. Of these a little goes a long way, and I guarantee discipline. The lower element in our studies cannot, must not, be excluded : it must merely be confined to its place. But, further, I find that the higher studies to which I have referred demand a nobler and yet more stringent discipline ; and a discipline which, operating in the sphere of thought and emotion and not in that of calculation, is vitally related to well-being and conduct. Needless to say, the task is a hard one. You hinted at my laziness a little while ago. I will not (since now we seem better friends) retort upon yours, but you must acknowledge that your system makes slighter demands, requires less watchfulness, less skill, less expenditure of oneself. Your task—forgive me—is well-nigh a mechanic task ; it is, on the whole, the easiest in which a professor may employ himself. It can be performed, and very well performed, when three-fourths of your nature is asleep. And in class it is performed when the students *are* in that quasi-somnolent condition. To *interpret* Shakespeare is a very different thing, and requires a preparation of one's self as well as of the lesson. As you suggest, to avoid vagueness (in oneself and in one's pupils) is a part of the difficulty—vagueness, with its too easy clarity, its “of course,” “you know,” “as a rule,” “so to speak,” and the rest of the miserable tribe of evasions. But if we are not capable of mastering this difficulty, and insisting on its mastery in others, we are scarcely professorial people. The struggle, at all events, is an extremely healthy one, for all concerned.

Bar.—You are persuasive, yet I distrust enthusiasm. Infatuation is frequently the better name. I cannot answer you, however, without casting doubt upon your capacity, which would be discourteous, and upon my own, which would be unwise. But stay : one thing, I observe,

you have forgotten, and that the most important. I smile to think of such inadvertence, and pity your confusion. You are aware that the very centre of our university system, its essential of essentials, its criterion of alumni and criterion of itself, its significance, its claim, its victory (pardon my somewhat inflated language) is *the degree examination*. I felt obscurely, all the time, that there was something essentially wrong with your ideas. Would that it had occurred to me earlier to submit them to this, the only adequate test. How *can* such a course of instruction be *examined on*? "Annotate" I know; "comment on, with reference to the context" is familiar to me; and many a fine question, too, arises from the detailed study of a single play, or a couple of plays, which will be out of place when the field of study includes half a dozen. I challenge you to produce a question-paper. Acknowledge the folly of your notions.

Brad.—I will produce a hundred—and not one "annotate" among them. Not that I should greatly care were the examination to perish. Obviously, however, it must remain; and you will find that, with due training, our young men will acquire knowledge—and *stature*—which can as well be tested in an examination as any mechanical knowledge can be. If you are distrustful, or curious, I will guarantee to furnish you within this hour with a paper the results of which will show most definitely whether a student has studied to advantage the four greatest tragedies of Shakespeare; and I can assure you that the example of older and greater universities furnishes us with innumerable papers of this kind.

Bar.—I cannot, of course, be so discourteous as to contradict you, but I am far from satisfied as to this momentous matter of examinations. On what lines, for example, will the student be able to prepare? The field will be so wide, the matter so flexible. His stock of the "cut and dried" will no longer avail him, no fair tabulations will stand by him. He will not even be able to guess . . . no, no, I did not mean what I was about to say, but he will not, as I said before, know what lines to go upon.

Brad.—A fiddlestick for lines: is a student a railway engine? For heaven's sake, let him have some choice, some discretion. Let not the expectation of examinations and the kindly precision of professors' notes pluck his individuality before it blossoms. As for your interrupted sentence, it was well that you began it. Examination questions, as you perceive, will *not* be guessed before hand; and the readiness of the student will consist partly, indeed, in definite knowledge, but chiefly in developed instinct, sympathy and understanding. The examination

paper—and some of the questions it contains will not mention Shakespeare at all—will be a test of growth and of power rather than of memory. A degree may then be of intrinsic value.

Bar.—You are fantastic : I admire the suggestion of questions without reference to the title of the paper ! I suspect you of exaggerating, in order to impress me. And indeed I am so far impressed as to think the experiment—perhaps—worth making. You must not, however, expect me to vote with you, unless I can find some device to bridge the gulf between the old view and the new. For, in my opinion, consistency is an essential element in reputation.

J. C. ROLLO.

## FROM HUME TO GREEN (VI).—Coleridge.

IN one of his early essays, T. H. Green, after pointing out the sceptical and destructive effects of the ethical theories of the system of philosophy "to which Locke first gave classical expression and which Hume worked out to its logical issues," proceeds to remark that the reconstruction of moral ideas came not directly from a sounder philosophy, but from the deeper views of life initiated by contemplative poets, like Wordsworth; from the revival of the evangelical religion; and from the conception of freedom and right which Rousseau popularized. It is singular that Green omits to mention in this connection the great name of Coleridge, who was, in certain respects, the most conspicuous representative of the tendencies opposed to utilitarianism. It is well known that the Oxford Reformation movement opened in conscious antagonism to utilitarian liberalism and we have the express statement of its great leader, that the teaching of Coleridge co-operated with other influences in preparing the way for the movement. (Newman, *Apologia*, p. 97.) Again Coleridge's idealistic interpretation of the fundamental doctrines of Christianity inspired the Broad Church movement and exercised profound influence on men like Maurice, Arnold and Jowett who were destined to leave their mark on the advanced thought of the nation. "No one," says J. S. Mill, "contributed more to shape the opinions among younger men who can be said to have any opinions at all." Among the "younger men" was the greatest of the utilitarians who both in his autobiography and a well-known essay has made ample acknowledgments of his special indebtedness to the writings to the conservative thinker.

It was the great aim of Coleridge "to show the necessity of replacing the mechanical interpretation of life and nature, which he found in possession of the field, by one consistently spiritual, indeed, religious. And he carries out this purpose over the whole field of experience; in metaphysics and philosophy, in ethics and politics; not to mention his application of the same principle to imaginative creation." (Vaughan.)

The supreme poetic endowment of Coleridge enabled him to discern early in his life the intimate correspondence that exists between the mind of man and the laws of nature. (Works, Vol. I, p. 465). He traces this agreement to a supersensible source "which being at once the

ideal of the reason and the cause of the material world, is the preestablisher of the harmony in each and between both," the same conclusion forced itself on him by his analysis of the human consciousness. Coleridge draws a vital distinction between reason and understanding. The latter is concerned with the particulars in time and space. It reduces the confused impressions of sense to their essential forms, quantity, quality, relation of cause and effect, and thus raises the materials furnished by senses into objects of reflection and so makes experience possible. Reason, however, is concerned with the knowledge of the laws of the whole considered as one. Its province is the science of the universal which underlies the particulars. It is therefore capable of discerning truths that transcend sense. "It cannot rightly be called a faculty, much less a personal property of any human mind. It is a ray of the divinity of man. It is the presence of the Holy Spirit to the finite understanding, at once the light and the inward eye."

Further, there is a distinction in reason itself. (Works, Vol. I, p. 241.) In relation to the world of thought it is the speculative reason and stands in opposition to all mere particulars; in relation to the world of action, it is the practical reason and stands in opposition to all mere individual interests. The practical reason which is essentially connected with the will makes us conscious of the Categorical Imperative in us which peremptorily commands us to do unto others as we would that they should do unto us, "a fact of which we are no less conscious than we are of the appearance presented by our outward senses." This Categorical Imperative or Conscience is the voice in us of the universal reason or, in religious language, of the will of God, which is the last ground and final aim of all our duties. (Works, V, p. 564.)

It is no wonder that with this insight into the spiritual foundations of knowledge and ethics, Coleridge should reject with scorn Paley's well-known definition of virtue as "the doing of good to mankind, in obedience to the will of God, and for the sake of everlasting happiness." Moral goodness is something other and more than mere prudence. "Schemes of conduct, grounded on calculations of self-interest, or on the average consequences of actions, supposed to be general, form a branch of Political Economy, to which let all due honor be given. Their utility is not here questioned. But however estimable within their own sphere such schemes, or any one of them in particular, may be, they do not belong to moral science, to which, both in kind and purpose, they are in all cases foreign, and when substituted for it,

hostile. Ethics, or the science of Morality, does indeed in no wise exclude the consideration of action; but it contemplates the same in its originating spiritual source, without reference to space, or time, or sensible existence." (Works, I, p. 292.) In one of his "closely reasoned pieces, Coleridge argues with convincing force that the doctrine which makes outward consequences the chief criterion of the right and wrong of particular actions is neither tenable in reason nor safe in practice. In the first place, the criterion will vary with the notions of each individual which depend on his natural talent and acquired knowledge. Secondly in laying stress on outward action it diverts attention from the will or the inward motives and impulses which constitute the essence of morality. "Our fellow creatures can only judge what we are by what we do; but in the eye of our Maker what we do is of no worth, except as it flows from what we are." "One of the most persuasive, if not one of the strongest, arguments for a future state, rests on the belief that although by the necessity of things our outward and temporal welfare must be regulated by our outward actions, which alone can be the objects and guides of human law, there must yet needs come a juster and more appropriate sentence hereafter, in which our intentions will be considered, and our happiness and misery made to accord with the grounds of our actions" (Works, II, p. 286).

In politics Coleridge is the true successor of Burke. Consistently with his teaching that while morality is concerned with the inward motive, law has to do with outward action, Coleridge holds that the end of all good government is to regulate the actions of bodies of men as shall be most expedient under given circumstances and that therefore expediency should be the guiding principle in all political questions. He repudiates all those theories which deduce principles of politics from abstract grounds of reason or natural right, and as an impressive illustration of the futility of abstract reasoning in politics quotes the example of the disciples of Rousseau in the French Constituent Assembly who, when they proceeded to construct the framework of the constitution according to the principles of pure reason, did not hesitate to exclude women and children from political power in spite of their master's teaching that every rational being has an inalienable right to sovereignty. (Works, II, p. 180.)

Consistently again with his general philosophical standpoint, Coleridge lays stress on the organic relation of the individual to the state. Individualism in politics is mischievous because it makes us ignore the cardinal fact of man's vital dependence on the community of which he

is a member. All that is distinctive in him is due to the moulding effect of the social forces which operate on him from his infancy. As Coleridge puts it admirably in his striking essay on Faith, "unlike a million of tigers, a million of men is very different from a million times one man. Each man in a numerous society is not only coexistent with, but virtually organized into the multitude of which he is an integral part. His *idem* is modified by the *alter*. And there arise impulses and objects from this synthesis of the *alter et idem*, myself and my neighbour." The state, it follows, is not a mere aggregate of separate individuals but an organism shaped into a unity by traditional beliefs and common institutions. "The right idea of the state implies that the integral parts, classes or orders in it are so balanced or interdependent as to constitute, more or less, a moral unit, an organic whole, and the idea of the constitution is the informing principle arising out of the idea of the state, of its coherence and unity." (Works, VI, p. 95.) Ideally considered, every state is a harmony, providing for the two cardinal principles of permanence and progress. (Works, VI, pp. 38 to 44.) In the course of historical development, the principle of permanence has come to be associated with the landed interest, and the principle of progress with the commercial and professional class which may be called the personal interest. The stability of a state depends on the harmony or balance of these two interests. Civilization would, however, be a doubtful boon, if it is not "grounded in the cultivation and the harmonious development of those qualities that characterize our humanity," in other words, if it is not based on mental and moral culture; and this is the work of the National Church. According to Coleridge, the state, in its comprehensive sense, includes the National Church. The National Church is not, however, an exclusively religious organization. In its primary acceptation and original intention, the National Church "comprehended the learned of all denominations, the sages and professors of the law and jurisprudence, of medicine and physiology, of music, of military and civil architecture, of the physical sciences, with the mathematical as the common organ of the preceding; in short, all the so-called liberal arts and sciences, the possession and application of which constitute the civilization of a country, as well as the theological. The last was, indeed, placed at the head of all; and of good right did it claim the precedence. But why? Because under the name of theology or divinity were contained the interpretation of languages, the conservation and tradition of past events, the momentous epochs and revolutions of the race and nation, the continuation of the records, logic, ethics, and the determination of

ethical science, in application to the rights and duties of men in all their various relations, social and civil; and lastly the ground-knowledge, the *prima scientia*, as it was named,—philosophy, or the doctrine and discipline of ideas.” (Works, VI, p. 53.) Coleridge rejects the *let alone* doctrine of laissez faire politics, a doctrine generated, as Mill reminds us, at a time when Governments were hopelessly incompetent and selfish. According to Coleridge the functions of the state are in the highest degree positive and do not end with the attainment of security of person and property for its members. It is the duty of the state to make the means of subsistence more easy to each individual. It is the duty of the state to secure to every one of its subjects the hope of bettering his own condition or that of his children. Above all, it is the duty of the state to set apart a portion of the national income for the support and maintenance of a permanent class or order for the promotion of moral and intellectual culture among its subjects. The following passage, reminiscent of Harrington’s Utopia, indicates the function of the order thus endowed. “A certain smaller number were to remain at the fountain-heads of the humanities, in cultivating and enlarging the knowledge already possessed, and in watching over the interests of physical and moral science; being likewise the instructors of such as constituted, or were to constitute, the remaining more numerous classes of the order. The members of this latter and far more numerous body were to be distributed throughout the country, so as not to leave even the smallest integral part or division without a resident guide, guardian, and instructor; the objects and final intention of the whole order being these:—to preserve the stores and to guard the treasures of past civilization, and thus to bind the present with the past; to perfect and add to the same, and thus to connect the present with the future; but especially to diffuse through the whole community, and to every native entitled to its laws and rights, that quantity and quality of knowledge which was indispensable both for the understanding of those rights, and for the performance of the duties correspondent; finally to secure for the nation, if not a superiority over the neighbouring states, yet an equality at least, in that character of general civilization, which equally with, or rather more than, fleets, armies, and revenue forms the ground of its defensive and offensive power.” (Works, VI, p. 52). According to Mill the definitive establishment and vindication, against Bentham and Adam Smith and the whole eighteenth century, of the principle of an endowed class for the cultivation of learning and the diffusion of its results among the community is one of the permanent benefits which political science owes to the teaching of Coleridge. (Dissertations, I, p. 445).



The greatest service, however, according to Mill, which Coleridge has rendered to politics consists in his reviving the idea of a trust inherent in landed property. "The land, the gift of nature, the source of subsistence to all, and the foundation of everything that influences our physical well being, cannot be considered a subject of property, in the same absolute sense in which men are deemed proprietors of that in which no one has any interest but themselves that which they have actually called into existence by their own bodily exertion." We shall see when we come to deal with Mill, that the principle of land nationalization plays an important part in his political theory. It will be sufficient here to note that in Mill's opinion "the state fails in one of its highest obligations, unless, to the full extent of its power, it takes means of providing that the manner in which land is held, the mode and degree of its division, and every other peculiarity which influences the mode of its cultivation, shall be the most favourable possible for making the best use of the land: for drawing the greatest benefit from its productive resources for securing the happiest existence to those employed on it, and for setting the greatest number of hands free to employ their labour for the benefit of the community in other ways." (Disertations I, p. 455.)

N. NARASIMHA MOORTHY.

## INDIAN ART (III)

### IV.

MUSIC.—Next only in grandeur and sublimity to poetry, music employs sound as its medium. It is in fact a language of sounds. Sometimes the sister art of poetry is called in and verses are set to music. Music may not appeal to all people, and certainly does not appeal equally to all.

We express our feelings and thoughts by peculiar gestures of the body, or inarticulate sounds or regularly constructed grammatical sentences. The first we may call the gesture language, the second the sound language, and the last the word language, inasmuch as each of the three fulfils the conditions of a language. In each of these languages there is prose and poetry. Semaphore signalling, beckoning to a friend in the distance are instances of the most prosaic form of the gesture language. But dancing, which is the expression of some of our deepest emotions by regular and pleasing motions of the limbs is a characteristically poetic form of the gesture language. The Indian dancing follows a code laid down by Bharata and is peculiarly graceful and expressive. The supple movement of the hand and foot, the graceful bending, now and then, of the head and the chest, the change of expression in the face, corresponding exactly to the gestures of the body are admirably effective. Unfortunately this art is fast disappearing in this country.

The sound language is music. The *Alapana*, the musical prelude to a *Raga*, like prose in literature, with many sentences and paras, is continuous and sonorous but not cut up into regularly ending rhythms of music as in the *Ragas*. This is why the keeping of time is not observed in the *Alapana*. The *Ragas* constitute the poetical mode of the musical expression. The composition of the *Ragas*, and their nature, we shall investigate in a little more detail.

We express our predominant feelings by various sounds, which when uttered raise in the minds of others an idea like that which we have in our minds. A cry uttered in fear is easily distinguishable from that uttered in joy or wonder. The long moaning sound arises only out of the deepest agony of the heart. These sounds are really the expression of the inner states of consciousness. Like words in literature they have a peculiar meaning, but they need to be properly combined

to express our complex feelings clearly, just as words need to be put into an ordered sentence to express any idea.

Keeping these elementary notions in their minds the makers of Hindu music invented a system of seven sounds, *sa, ri, ga, ma, pa, da, ni*, followed by the first *sa* in a higher pitch (*shadja*) at the end. These eight sounds, like the nine numbers and the zero in Arithmetic, can express definite things when they undergo certain permutations and combinations. So then the *Ragas* are the result of well-chosen combinations of these elemental sounds. But the *Ragas* can express any feeling at all when the constituent musical sounds mentioned have definite significations of their own. If the *swaras*, as these sounds are called, are meaningless, then the *Raga*, which is composed of these sounds, must also be meaningless. Thus it is necessary to see if these *swaras* express anything definitely before we proceed to examine the *Ragas*.

Taking the *swaras* one by one we have at first *sa* in the lower *shadja*. This *sa* expresses a state of perfect tranquillity and unbroken peace. It indicates the mood of yogis, children and those in deep sleep. *Ri* depicts a state of mind slightly disturbed, but only so slightly that there is a tendency to relapse into sleep again. Half-awakened men are in this state of mind. When any one is in the *ga* mood, he has been completely awaked and is inquiring into the cause of the disturbance. This is the mood of annoyance and inquiry. *Ma* expresses egotism, anger, distress, helplessness and moodiness. *Pa, da* and *ni* are in the order of relapse into the ecstatic tranquillity expressed by *sa* in the higher *shadja*. Prince Dhruva doing penance in the forest is in the state of consciousness expressed by *sa* in the higher pitch. This system of musical sounds exhausts all the elementary psychic modes of the human mind. These simple sounds, then, standing for simple states of mind, when combined harmoniously and in various ways result in the formation of distinct *Ragas* expressing complex mental conditions. Let me illustrate this. Menaka with her baby Sakuntala in her arms approaches Viswamitra Rishi, by whom she has begotten the child. Viswamitra is sorry that he was lured away by Menaka, who is triumphantly successful in her errand of breaking Viswamitra's *tapas*. But she is bent upon annoying him still further. So she brings the child in her arms and says to Viswamitra that she is Menaka, she is his beloved Menaka, and that she has borne him a fair female child. She implores him to look on the celestial child, and in the end begins to persuade him to take care of the child, as it is his. When we begin to discuss the musical moods of these three, we find at once that the baby,

incapable of expression is in the state of perfect tranquillity expressed by *sa* in the lower pitch. Menaka is full of feelings of triumph and the malicious intention of annoying Viswamitra. But she conceals these feelings successfully and speaks outwardly in a most humble and supplicating tone. The *Raga* which best expresses her state of mind should have a vein of egotism and triumph hidden in the outward feeling of submissive love. On the other hand, Viswamitra, before Menaka's arrival with the child, is doing deep penance, and so is in the mood indicated by *sa* in the lower *Shadjā*. Menaka tries to wake him and he passes into the *ri* mood, with the possible relapse into deep penance. Menaka persists, and Viswamitra wakes up and inquires into the cause of the disturbance, and seeing Menaka asks her why she woke him up. The mood is now that expressed by *ga*. He hears Menaka's protests and becomes unhappy and wretched because of the thought of his folly. He is now in the *ma* mood, the mood of indescribable misery. The prominent mood in his case, when he replies, is one of *ma*. Therefore the *Raga* that most suitably expresses his feelings would be one in which the sentiment of wretchedness abounds, and therefore *ma*, which stands for that state of mental consciousness. This is how the Indian genius has linked up the psychology of the human mind with the principles of the art of music.

Each of the six seasons of India has its own distinctive characteristics and expresses a distinctive mood of nature. Each hour of the day also has its own clearly marked off features, and expresses on a miniature scale, a mood of nature. Therefore the musical code of India lays down that only certain *Ragas* should be sung in certain seasons, and certain of them only at certain hours of the day. The principle involved is that music should harmonise with the state of the singer's mind and the natural environment.

The musical system of India is a development of the early chanting of hymns for religious purposes in Vedic times. The *Sama Veda* is enjoined to be recited in strict adherence to the rules of rhythm. Time perfected the crude religious invention of the Rishis, and gradually dancing, which at first was inseparable from music, became a separate art, while music freed from religious shackles, became a contrivance for pleasurable sensation. As in painting and sculpture, foreign influences have considerably modified the Indian practice. Persian influence greatly affected the spirit of Indian music during Akbar's and his successors' time. Great composers of music have from time to time appeared, such as the famous Purandhar Das, Vittal Das, Thyagaraja. Tulsi Das and Tan-Sen who were also singers of widely-sung songs,

The inimitable Bengali songs of Rabindranath Tagore in our own days have aroused very great enthusiasm.

We should next pause to consider the instruments of music. These are leather instruments, percussion instruments, and those made of metal wires and strings. Instruments worked by wind, like the European organ have come into very common use now-a-days. Water too, is an agent of music.

It may generally be stated that wind instruments and percussion instruments produce what is called sublime music, while metal wires, strings and *jalatarang* (waves of water) produce what is known as "beautiful" music. Indian music taken as a whole aims at the attainment of the beautiful. Indian musical instruments are peculiarly well-adapted to express the delicate harmonies of the innermost passions and feelings in the unseen corners of our hearts. The Indian music aims at melody or the unbroken succession of sweet sounds, expressing all shades of emotion and feeling.

The abundant use of harmoniums and pianos for Indian music, even by experts, grieves one much, because the spirit of the Indian musical system is lost sight of and the end for which it exists is forgotten when instruments which fit in excellently with other musical systems are used in India, which would on the whole be the better for keeping to its own indigenous instruments of music. Music has, of late, been increasing rapidly in popularity, and hopeful signs are already aglow on the horizon. This tendency is borne out by the frequent sessions of the All India Musical Conference and the establishment of musical colleges and schools. The Mysore Durbar especially has been giving support to deserving musicians, among whom Mr. Seshanna is unquestionably the greatest.

N. MADHAVA RAO.

*(To be continued)*

## MYSORE UNIVERSITY UNION: REPORT FOR THE YEAR 1921-22.

(The following paragraphs are extracts from the Report.)

The work of the Union proceeded on the same lines as during the previous year.

It was somewhat more difficult than during the previous year (the first complete year of the Union's existence) to obtain essayists and leaders in debate, and fewer meetings were held. A list of meetings and of chairmen is appended. One of the most successful was the "Staff Debate," in which Messrs. Wadia and B. M. Srikantia were the principal speakers, students were seconders, and a student, Mr. K. Anantharamiah, B.A., occupied the chair. It was a very successful innovation; the speaking was admirable, and the student-chairman was a very conspicuous success. The Union was very fortunate in the kindness of Rai Bahadur G. N. Chakravarti, Vice-Chancellor of Lucknow University, who delivered a memorable address, containing the most timely counsel. At this meeting and at the giving of the inaugural lecture by the President, the Vice-Chancellor of our own University was good enough to preside and speak. His words, as ever, made a great impression. For this and for his constant interest and kindly and helpful advice the Union owes him a very great debt. At several meetings the Principal and Mr. Wadia presided, nor was this the only proof of their constant interest in the work of the Union.

Ping-pong, chess and draughts continued to be popular, and successful tournaments in these games were held. Other games were added to the stock.

By kind sanction of the University authorities, the go-downs outside the Union building were converted into restaurant premises, and they have proved very satisfactory. The contracting system continued, and worked satisfactorily on the whole.

Government declined to sanction the substitution of pillars for the wall dividing the central hall downstairs from the north room that a sufficiently large debating hall might thus be created. The idea of building a new hall was suggested by the member of Council concerned, but this has not been done. The expense is, of course, too great to be incurred at present; and in any case one is hopeful that some device may be found whereby, consistently with the safety of the building, the

two rooms may be thrown together, the necessity for erecting a new building thus being saved. Towards the end of the year the benches were moved to the downstairs hall from the hall upstairs which had originally been intended as the debating hall. The downstairs hall is thus well equipped; but, like that upstairs, it is too small.

The first "Union-Day" was celebrated on February 26th, a very successful social and musical entertainment being held. On this occasion the portrait of Mr. S. Radakrishnan was unveiled, and Mr. Wadia, who performed the ceremony of unveiling the portrait, and the President spoke of Mr. Radhakrishnan's unforgettable services to, and influence in, the College and the Union.

The President resigned office from the close of the year (June 1922), and Mr. Wadia was nominated his successor.

A new, fuller and greatly improved constitution was drafted by a special committee appointed for the purpose and presided over by Mr. Wadia, and this, with slight modifications, has now, I believe, been approved by the Vice-Chancellor and the University Council.

I should like to express appreciation of the strenuous work done in the interest of the Union by the members of the Executive Committee, particularly the conveners of the various sub-committees and most of all the Secretary, Mr. S. V. Krishnaswamy Iyengar. And I wish to express deep gratitude not only for the Vice-Chancellor's constant encouragement but also for the continual help of the Registrar, who, since the commencement of the work of the Union, has furthered its interests by immediate and earnest attention to all its needs.

J. C. ROLLO,  
*President of the year.*

This report was written out by Mr. Rollo, and so naturally omits to thank the person who contributed most to the success of the Union, himself. At the last meeting of the old managing committee held in July 1922 with the new President in the chair a resolution of appreciation of Mr. Rollo's most valuable services was unanimously passed, a fact which cannot be lightly passed over in any report of the Union.

A. R. WADIA,  
*President.*

STATEMENT OF MEETINGS HELD, 1921-22.

- (1) Debate, 11-7-1921, "That inter-caste marriage should be legalised." Prior to the debate the President made a reference to the late Professor B. Subba Rao. (*Chairman*, Mr. J. C. Rollo.)
- (2) Impromptu Debate, 18-7-21. (*Chairman*, Mr. J. C. Rollo.)
- (3) Debate, 4-8-21, "That the spinning-wheel is supremely effective for the furthering of Swaraj." (*Chairman*, Mr. N. S. Subba Rao.)
- (4) Inaugural Address by the President. (*Chairman*, Dr. Brajendranath Seal.)
- (5) Paper, 21-9-21, "Bolshevism," by Mr. Mahomed Valiulla. (*Chairman*, Mr. J. C. Rollo.)
- (6) Debate, 25-9-21, "That Government should take measures to abolish beggary in India." (*Chairman*, Mr. J. C. Rollo.)
- (7) Debate, 27-9-21, Conclusion of debate on beggary.
- (8) Paper, 2-10-21, "The problem of women's parts in the Indian theatre." (*Chairman*, Mr. J. C. Rollo)
- (9) Dr. G. N. Chakravarti's Address, 4-10-21. (*Chairman*, Dr. Brajendranath Seal.)
- (10) Paper, 2-11-21, "Philosophising," by Mr. M. A. Venkata Rao. (*Chairman*, Mr. J. C. Rollo.)
- (11) Impromptu Debate, 5-11-21. (*Chairman*, Mr. A. R. Wadia.)
- (12) Debate, 23-11-21, "That the extension of the suffrage to women in India is at present undesirable." (*Chairman*, Mr. J.C. Rollo.)
- (13) Paper, 12-12-21, "Imperial Preference," by Mr. M. G. Lakshminarsu. (*Chairman*, Mr. N. S. Subba Rao.)
- (14) Paper, 21-12-21, "The Indian Exchange Problem," by Mr. M. Narayana Rao. (*Chairman*, Mr. A. V. Krishnamurti.)
- (15) Staff debate, 16-1-22, "That English is the language best suited to become the common language of India." (*Chairman*, Mr. K. Anantharamiah.)
- (16) *Union Day*. 26-2-1922.



## REVIEWS.

*The Wreck.* By Rabindranath Tagore. MacMillan. 8s 6d. net.

THIS is an early novel, and was written many years before "The Home and the World." Would that one might know which type of book the Bengali reader likes better, and how the author appraises both. The present reader, who could not tolerate "The Home and the World," finding the self-occupation and self-analysis of its people annoying in the extreme and morbid to the extinction of art, has delighted in "The Wreck." It is good at all points. To the stranger it is good, because of its vivid presentation of Bengali life, character and habits of mind and emotion. To any one it is good because it possesses all the qualities of the admirable novel, and adds to these certain of the noblest qualities of poetry. It is excellent as story, constructed and told with skill. It is far from being a "novel of incident," yet it is well-nigh as difficult to lay down as the most sensational of those, so thoroughly does the author interest us in the fortunes, as in the characters, of the persons. These persons are distinct and individual, and they live alike in their acts and in their talk. Ramesh, able, finely-tempered, sympathetic yet over-susceptible to personal comfort, well-meaning yet irresolute and procrastinating, we know in the west as in the east, while Nalinaksha and the ladies are distinctively Indian. Akshay is perhaps the most interesting and most individual person in the book, and seems to bear the marks of drawing, more or less, from life. The author has the delightful habit, in dialogue, of dropping into the dramatic form, which perhaps enables one to conceive look and gesture better than any description of them. Among the finest passages of the book are poetic. Just as the fact that Thomas Hardy is a great poet is suggested by such great passages as the opening one in "The Return of the Native," so here the great poet appears in passages in which the inmost heart of Nature is revealed, and her relation with the human spirit. His figures, as ever, are less of the nature of comparison than of that of central truth broadening out through many a manifestation, touching the mind to a new sense of the unity of all things.

This novel is not critical of society. Mr. Thompson remarks, in his "Rabindranath Tagore," that here the author "shows how Hindu family relationships are based not on human feelings but on conventional respect and worship." One wonders whether the author would take this view of his work. To us it seems to have no such import, certainly

no such purpose. The state of society is accepted, and stress is laid on the beauty of character and sacrifice which it fosters. There is nothing whatever of satiric comment. There is no corrective suggestion. The point of view is far other, and indeed that which social reformers consider unfortunate is scarcely touched upon. We cannot like the worshipping self-effacement of Kamala towards the end; but the presentation is exquisite, and everything tends towards sympathy with the individual rather than towards criticism of her attitude or the system that makes it natural. The theme is rather "human feelings" as displayed in these "family relationships"—and human feelings that are ultimately satisfied and happy—than the sufferings that may sometimes invade such relationships. It is delightful to come across a novel of Indian life that contains nothing whatever of propaganda.

The only trouble is with regard to the opening situation, the improbability of which seems to approach the impossible. That two totally distinct newly-married couples should be wrecked simultaneously yet separately in a storm on the Bengali waterways in such proximity that the sole survivors, one husband and the other wife, should meet immediately on the bank, each in addition being ignorant of the appearance of his or her real spouse, is very difficult to admit. This improbability however does not seem to spoil the story. As for the translation, it is so natural and living as not to seem like a translation.

J. C. R.

*An Eastern Library.* (1) *Tales of Bengal.* By Sita and Santa Chatterjee. With an Introduction by E. J. Thompson, Oxford University Press.

THESE translations of Bengali short stories stimulate the desire for more. These particular stories are purely domestic, and pervaded by ironic comment upon social conditions. This ironic tone seems to come naturally to the Indian writer who seeks to reveal and interpret contemporary society, since among its most prominent features are the tragic anomalies against which social reform is for ever tilting. Fiction thus tends to become (whatever else also) a social reform pamphlet, which is unfortunate for art and the pure delight of creation. It is some consolation to the story-tellers, however, to know that they are among the most powerful allies of the social reformer. There is occasional bitterness in these tales. They are

written by women, who know how the system thwarts and oppresses women. The writers are the daughters of Babu Ramananda Chatterjee (the editor of *The Modern Review*), who, in Mr. Thompson's words, "has especially made the cause of women his own, and has never let pass any reasonable opportunity of protest against wrongs inflicted by society." But in spite of pervasive irony, and flashes of bitter indignation, the stories are lifted from the propagandist to the artistic level by sympathy, by an admirable power, in the case of Santa Devi, of humorous portraiture, and by a verbal felicity possessed by both writers, which, if so evident in translation, must be remarkable in the original.

In the art of story-telling, however, the authoresses have far to go, if these stories are to be taken as typical of their work. To breathe life into a story in which hardly anything happens is the rarest of gifts. These tales are, for the most part, very thinly provided with incident. There are a few living writers with whom this would not matter: perhaps the most notable is Katherine Mansfield. By extraordinary vividness of detail, by subtlety of insight, by distinctive touches of various kinds, such writers can give first rate value to the merest sketch. The authoresses of these stories have not been able to do this here. "Loyalty," containing such fine work that it is far more to be praised, on the whole, than to be blamed, is yet conspicuously a failure. Its essence is of extreme interest, and profoundly moving, and an admirable thing might be made of the story were it compressed from nineteen pages to two. As it stands it is morbid, wearisome, even unreal. "The Letter," again, is woven of very scanty material. Polonius would be right this time: it is indeed "too long." The effect is weak, and there is no clearness, no life, in the persons. One hopes that the future holds great things for these young writers, but at present they have not the subtlety, or the power, or the individuality, to make much out of little. If they could only be content for some time to depend somewhat more upon mere substance, this would give craftsmanship a chance to develop. No-one is born a master of the minute and rigorous art of short-story-making, and their craftsmanship needs discipline to improve it. Finally, it is desirable that the humour that makes the first story, "The Ug'y Bride," so delightful should be given more of a chance. In Bengali society, as in any other, there are all the elements of joy and sorrow, and all of them must be visible in fiction's mirror. But, from every point of view, it is well to give laughter a very prominent place. Not only is laughter good for writer and reader but it is as true as tears, and the presentation that tends

towards laughter may well give not merely the pleasantest but also the most genuine account of the life around us, and provide the healthiest impulse for its betterment and our own.

J. C. R.

*Indian Logic and Atomism.* By Arthur Berriedale Keith, Oxford: the Clarendon Press.

AMONG the handful of English Sanskritists Dr. Berriedale Keith undoubtedly occupies an eminent place. In recent years such excellent expositions of the lesser known systems of Indian Philosophy have flowed from his pen as to have created in his readers a hunger for more such books. The book under review is a welcome addition to the scanty literature in English which has sought to expound the principles of Indian Logic as found in the *Nyaya* and *Vaicesika* systems to western readers. The book is divided into two parts. The first part is a scholarly summary of the literature bearing on the subject, but suffers too much from compression and is inevitably overloaded with names. The second part, which deals with the system of the *Nyaya-Vaicesika*, is by far the most entertaining. It is subdivided into two parts dealing with Epistemology and Metaphysics respectively. The ground covered in these chapters is very wide: from the *pramanas* as the very foundation of philosophy, through the *aprama* and various ontological categories like substance and quality, time and space, to the very acme of philosophical knowledge, the existence of God. Dr. Keith's account of all these topics is very lucid and learned, and will undoubtedly be found of great value by all students of Indian philosophy. It would be vain to deny that so far as the western world is concerned the study of Indian philosophy has not yet outgrown the stage of childhood. The extreme vogue of the Vedanta in India has misled many into thinking that Indian philosophy means just the Vedanta. Dr. Keith by publishing his studies of the lesser known systems of Indian philosophy is doing a conspicuous service to the cause of philosophy.

A noteworthy feature of the book is a full Sanskrit index over and above the usual English index. We cannot help adding that, even in these days of expensive publication, Dr. Keith's book, which is by no means of mere ephemeral interest, might have had a cloth binding instead of a paper cover.

X. Y.

*Vijaya Dharma Suri: his Life and Work.* By A. J. Sunavala, B.A., LL.B., Cambridge University Press.

THE subject of this biographical sketch is a Jain scholar and saint who has done much to spread a correct knowledge of the principles and practices of his religion. There is particular need for such work in the case of Jainism about which all sorts of misconceptions have prevailed; and Vijaya Dharma Suri is eminently well-fitted for doing it. He has depth of learning and great powers of persuasion; and, because of his love of truth and tolerant spirit, he is as eager to understand others as to make himself understood. It was the possession of qualities like these that enabled him to secure for his Jain *Pathasala* a permanent place in Benares where at first his very presence as a preacher seems to have been resented by the Hindus. He belongs to Kathiawar and was born of a humble Vaisya family in 1868. His early years, strange to say, gave no promise whatever of his future greatness. But spirituality should have been latent in him, for it manifested itself suddenly when he met with a reverse in life. He then made up his mind to renounce the world and put on the garb of a monk. This was in his nineteenth year. Ever since he has led a life of single-minded devotion to his ideal. He has taught and preached, written many works, founded *pathasalas*, started Reading Rooms and established Libraries—all for the purpose of bringing to light the intrinsic worth, too often ignored, of his faith. He is imbued with a truly catholic spirit and has assisted European scholars in various ways in their investigation of the history and value of Jainism. Hermann Jacobi, one of the most distinguished of them, referred to him in these words at a conference of Jain scholars held at Jodhpur in 1914: "I may express the feelings of gratitude which for a long time I have entertained for the distinguished Muniraj Dharma Vijaya Suri, with whom I am connected through a correspondence of many years. It gives me great satisfaction publicly to thank him for the obligation under which his uninterrupted kindness not only to me but also to other students of Jainism has laid us. He was always eager to give every elucidation on difficult points of Jain doctrine which were laid before him; and since I have been here, I have consulted him on many subjects." The book is very well written and contains an appreciative prefatory note by Dr. F. W. Thomas.

M. H.

*Training in Literary Appreciation.* By F. H. Pritchard. Harrap. P.T.I. Agency, Bangalore.

THIS is an excellent book for the beginner. Within 200 pages, the

author has managed not only to compress the most essential points about rhetoric and criticism, but also to append to each chapter a list of illustrative reading and a number of exercises. In addition, at the end, he has a good list of books for reference and further study and some general questions on the whole subject. At the very start, under contents, he has supplied a careful summary of the main principles of the book.

With all this, there is no feeling of crowding. The style is simple, and concrete, and the principles stand out clearly, being illustrated with very fine quotations from classical and contemporary writers. Remarks in appreciation always command assent, not being far-fetched or too refined. There is no sign of pedantry any where. Two of the writer's quotations, which cannot be easily forgotten, may serve as specimens of his careful choice:—one, from Kinglake's *Eothen*, suggesting monotony—

“You pass over broad plains—you pass over newly-reared hills—you pass through valleys dug out by the last week's storm—and the hills and valleys are sand, sand, still sand, and only sand, and sand, and sand again.”

Another, from Hutton's *Cities of Spain*, provides an instance of sublime reticence—(some one had spat on the tomb of a saint)—

“We have forgiven him. If you will, senor, we will pray for him, and for us all because—is it not so?—where one who is in trouble is left unaided, there passes an executioner; and where two or three are gathered together in unkindness, there is the Inquisition. As we knelt, I saw him wipe away the mark of scorn from the grave with the sleeve of his cloak.”

We must give an idea of the contents of the book. There are the usual questions of rhetoric, style and form, briefly dealt with:—figures of speech, the choice word, rhythm, suggestive and musical values of words and sounds, definition and forms of prose and poetry, and occasional references to literary history. The higher graces of literature and the moot points of literary criticism are given more elaborate treatment, with due notice of differences of opinion. It is really this part of the book that the Indian student would profit most by; he would learn to look out for, and judge for himself, artistic effects. Here are the principles of unity and contrast, of proportion and harmony, of personality and style, of the provinces of prose and poetry, of the gulf between fine writing and sublimity. And in preface, in introductory chapter, and wherever he gets a chance, the author insists on the reader doing his bit. His is no passive part: he must be active: he must cultivate his literary conscience; he must be tolerant and catholic

in taste. He is not to admire by proxy ; enter into other people's labours. Others may go before and point the way, but he must follow. He must learn to be sincere, allowing neither tradition nor fashion to have undue sway.

A few more remarks of the author will confirm his sane outlook on literature. Appreciation is akin to creation.—Literature, like life, is not to be defined ; it defies the foot-rule.—Lyrics are the expression of the poet's personal feelings, but they are of interest to us all because those very feelings of intense joy, bitter sorrow, deep passion, and tender regret that clamour loudest for expression are common to humanity and knit us all together.—The man who ordinarily scorns poetry finds that when he requires its solace, it is not forthcoming.—Again and again in these pages it has been urged that contrast, rhythm and verse-forms, assonance, consonance and figures of speech, are not, in true literature, superficial ornaments or exhibitions of verbal jugglery ; they are rather the results that arise naturally and inevitably from the harmony wrought by spirit between mind and matter, and spirit is but another name for personality. If the resultant expression is not sincere, then it has no claim to be called literature. The idea that reading turns a man into a bookworm, and unfits him for the practical duties of life, is as baseless as the kindred notion that literature is opposed to life.

Yes, literary education is on its defence to-day, but it will endure.

B. M. S.

# THE MYSORE UNIVERSITY MAGAZINE

SEPTEMBER 1922.

## EDITORIAL.

**THE SENATE MEETING.**—It stands to our discredit that in the "September" issue we are able to comment upon the November Senate meeting. Questions were asked about the lateness of the Magazine, and though the editor's replies were clothed in pertness, he nevertheless felt humble—and resolute to make yet another struggle after regularity, or to join in that effort any new organisation that may be formed for the conduct of the Magazine. To the question whether the Magazine could not, by some arrangement, be satisfactorily conducted the Vice-Chancellor made the notable reply that this would be achieved when the members of the university staff contributed regularly. No doubt they would feel more constrained to do so if there were an editorial board of which they were members, but even as things are several of them, and in particular Mr. Wadia, have been kind and faithful in their co operation.

The agenda was very heavy, and for once the Senate sat throughout Friday and Saturday afternoons, even then leaving many motions unconsidered. One of the most interesting academic points raised was the question whether in respect of a single paper common to two different degrees a candidate might qualify himself for both degrees at the same time. The tenor of our Ordinances is against this, and a motion was brought forward to make it specifically impossible to combine thus examination for the B.A. and B.Sc. degrees. The Senate would not pass the motion, and showed clearly its view that, as in foreign universities, such simultaneous qualification should be allowed. A number of cognate ordinances need amending to carry out this idea, and the matter will be canvassed in the University Council.

Mr. S. G. Sastry's long-deferred propositions came up at length for discussion. Mr. Sastry made a general prefatory statement in which he spoke of the sifting of these proposals through press and public



discussion by "educationists." We do not think the more of the proposals: the Senate is the body competent to discuss university matters, and the educationists whose opinions matter are there. As we have before remarked, public discussion is a very bad preliminary to discussion in the Senate, and merely tends towards insuperable confusion. The most important of Mr. Sastry's proposals was for the abolition of the Maharani's College by the amalgamation of its classes with those of the Maharaja's College. There are plenty of arguments on his side, and these he stated clearly and dispassionately. The separate maintenance of so small a college in these days when every pie is of importance had become a matter of doubtful wisdom in the eyes of many, and we were surprised that the motion was lost by so large a majority. No doubt the enthusiasm and eloquence of the lady speakers who defended the idea of a separate women's college had something to do with this: they knew, and could show, exactly what the Maharani's College stands for, and this is the one point that matters. Mr. Sastry and his supporters simply do not know how fine a work is done there. Restore the lady students to the Maharaja's College, and they will have equally good teaching—and will lose everything else that college life can give and that the Maharani's College gives in such full measure. And one is surprised that Mr. Sastry, with his zeal for foreign precedents, should not have noticed that separate colleges for women are recognised to be necessary by every educated nation in the world.

The motion for the abolition of the principalships met with practically no support. Certain speakers rose to the eloquence of sincere indignation in rebutting insinuations (not Mr. Sastry's own) against the principals; and even speakers not connected with the colleges, showed a most refreshing realisation of the fact that the principal's highest duties begin where routine administration ends.

When this Magazine is conducted by a Board, no doubt that Board will invariably be at one with the Senate, but perhaps an individual editor may claim the privilege of expressing other points of view. The Senate, as a whole, favoured the proposal that a "Court of Honour" should be formed in each college to help in disciplinary matters; and apparently the University Council is now expected to take the necessary steps. The *Bangalore Daily Post* gave a curiously misleading account of the discussion, indicating that it was disliked by the members of the college staffs. As a matter of fact they, in general, seemed quite pleased with it. Probably the chief reasons were that they were reluctant to oppose any suggestion which seemed to tend towards giving students a voice in college matters. Certainly we should all like to have something

## EDITORIAL

here like the Student's Representative Councils in Scottish universities: we professors, who are in touch with the students every day, know that it would be all to the good had they some real part in the working of the colleges, for they are keen, straight, and strenuous. But is not the institution of these "Courts of Honour" a very unfortunate way of seeking this? Not that it will do any practical harm. These "Courts" will do *nothing*, for the simple reason that there is nothing for them to do. Our students do not indulge in breaches of discipline: they have not the slightest inclination that way. The only occasions on which there is any difference of view between them and those who run the colleges is on the rare occasions when such matters as the holding of some anniversary procession come up for consideration, and students think it would be all right to hold it, because in their view it has no "political significance," while the authorities think differently. Obviously this is not a case for a students' "Court of Honour," and it is very noteworthy how difficulty in connection with such matters has been avoided in the Maharaja's College, for example, simply by the endeavour on the part of students and staff (particularly the Principal) to understand each other's point of view and by the exercise rather of reasoning than of discipline. There is nothing whatever for the "Court of Honour" to adjudicate upon, for students are men, not peccant school-boys—a point that escapes those who persistently refer to them as "boys" and want to legislate for them as if they were still children. But further, the very name "Court of Honour" seems to us an execrable one, tending towards morbid and priggish self-consciousness. Honour is not lacking in our students, and the less they talk—even think—about it the better. Were such an institution to be proposed in an English college, the proposer would meet with a ducking in the college fountain, learning thus the scorn in which sentimentality is held by the healthy English undergraduate. No doubt the students here will have the same feeling. To revel in the praise of one's virtue is like the vice of seeking that praise; and the judging of his fellows is a thing which the healthy-minded student would feel to be at once a slur upon his comradeship with them and a subtly vile exaltation of himself. There is a further point. English students may be rowdy enough upon occasion, but they have a profound regard for authority. They suffer its severest judgments with recognition of justice and with no discontent whatever. A tribunal composed of virtuous men from among themselves would be a laughing-stock among them: it is a very different kind of authority that can compel a student's veneration. It is precisely so with the Mysore student, except that he is not rowdy and cares considerably more about

getting on with his work than about anything else. But if it did so happen, in the lapse of years, that he committed such sin as would bring upon him the judgment of the egregious "Court of Honour" anyone who knows him at all knows how he would feel. He would feel not punished, not corrected, but injured and insulted. "The Principal I know, the College Council I know, but who are these?" We can delegate to students some of the *guidance* of other students and also the kind of *authority* that belongs to games, but never disciplinary authority. This would be bad for him who exerts the authority, for him who submits to it, and for discipline itself. We might just as well, in fact, have a "Court of Honour" to assist in maintaining the discipline of a university senate. In any such body there are more offences against discipline than in our colleges. Such a "Court" might deal with interruptions, loud and sustained conversation while speeches are being made, badgering of permanent officials, slanders upon individuals, canvassing for office and for support in proposals, wasting the time of the Senate with absurd motions. The idea of course, is laughable, nor would any senator stand it. It would be said,—“We are not schoolboys.” Neither are university students, and that is the whole point.

#### THE EDUCATION OF WOMEN—OR LABORATORY ATTENDANTS?—

We extend the good wishes of the University to Miss Lazarus, now in charge of the Vani Vilas girls' high school in Bangalore (who has recently returned from her foreign tour, undertaken at the behest of Government to study girls' education abroad), in the work, in which no doubt she is destined to be a leader, of developing female education in Mysore. She desires that the training of girls should be more closely related to their environment and the claims which life makes upon them, and seeks also that they should learn more about their own country. Her knowledge of comparative purpose and comparative method in female education abroad will be of the utmost value in Mysore. She has, however, received or fashioned strange doctrines which she has been preaching since her return. The following sentence, which reads like a joke, occurs in a communication sent by her to the *National High School Magazine*, Bangalore.—“For the majority of girls I would advocate the introduction of certain compulsory subjects *e.g.* Sanskrit, Physics, Chemistry, Biology as applied to Household Science, Hygiene, Physiology, Music, Drawing and Painting, Needle-work, Bacteriology, Home-nursing, Sanitary Science and perhaps Social Economics.” One is rather grateful for this *reductio ad absurdum* of the utilitarian thesis as to girls'

education. The idea that the education of girls should be especially designed to equip them as home drudges is a common one among men. Miss Lazarus would be far from subscribing to it, but her scheme more definitely fits it than any man-made scheme we have seen. "Education should be an adjustment of a growing human being to its environment." Certainly; and is a man's environment his office room? Is a woman's environment the wash-tub (it is apparently "the chemistry of washing" that she is to study), the sanitary and hygienic arrangements of the home, such household arrangements as relate to "physics?" Even if we add the care of her children (to be based on the study of physics and biology!) and the diversions of "music, drawing and painting," does this exhaust the environment of an immortal spirit? Even were we to consider—which heaven forbid—that her supreme and all comprehensive duty is that of being a good wife, will training of this kind make the meet companion of a husband? The study of even the least of the sciences is good in itself for anyone, but it is far from good to cram a curriculum with scientific stuff—and a smattering at the best—to the exclusion of almost all else. The fallacy is that of the extreme type of "vocational education," which seeks to fit a boy to earn his livelihood and cares nothing for the development of the boy himself. The system is more cruel in the case of girls, who can spend so few years at school. Those years are priceless: never again in life will occur this opportunity for growth and enlightenment, and the time is to be frittered away in studies that, for the most part, are utterly uncongenial and have a merely material end. There are many elements in education, but the first essential is the quickening of the spirit by contact with the noblest thought and emotion of men. The properly directed study of history can quicken thus. There must, of course, be a certain breadth in this study. Miss Lazarus rightly lays stress on the necessity that Indian girls should know the history of their own land, and the disgracefulness of the fact that they do not. But they must have some knowledge of world-history also, of the great movements that have revealed human nature in action. Without such knowledge they are ignorant with an avoidable and reprehensible ignorance. But it is the study of literature, whether it be the simplest ballad or the most elaborate epic, which does most for the spirit, rousing and maturing thought and sympathy, leading from infancy to enfranchisement. Whatever else an educational course for girls may contain this should be the corner-stone of the building, and in this scheme it is crowded into a corner. "Sanskrit"; but what about the vernacular literature, some of which can be appreciated at the very earliest stages? English apparently finds no

place at all among compulsory subjects. Certainly it can be done without, though even the practical handicap thus imposed upon later life is considerable: surely it is unfortunate that the educated Indian girl of the future is not to be able to speak English to anyone. The great pity, however, is to cut her off, for life, from the chance of reading English books—whether the classics of the past, or the varied, living literature of the present, or even the periodical literature that reflects the current life of the world. Perhaps she will keep up her biological, sanitary and bacteriological studies, maturing thus in spiritual beauty and wisdom!

Miss Lazarus' judgments on Europe are precise, as precise—may we suggest?—as those on Indian affairs of the European or American traveller who has spent a few months in this country. England suffers by comparison, and is, apparently, just waking up to wisdom. "Let us not fall into the same error as our English sisters whose education is a close imitation of their brothers." We wish our girls to be better equipped and enabled to adapt themselves to the various demands made upon them in after-life . . . Nowhere in Europe have I found such beautiful and attractive homes as in Denmark and Switzerland, where the order and system are excellent, due to years of training in Domestic Science. England is just waking up to the fact that this branch of education is all-important for women." These sentences combine many errors, not the least of which is the last—that English people do, or ever will, consider domestic science "all-important" in the education of girls. The general point, however, is this. Miss Lazarus is keen on such scientific systematising of home life as is found in certain continental countries. It is obtained at a tremendous cost: it is inseparably related to the limitation and subjection of women. Miss Lazarus' study of the homes of Europe is incomplete. To understand the home atmosphere, the true significance of home life, in even a single foreign country takes many years, and Miss Lazarus can but have touched the fringe in her short visit. And especially the English home, and English womanhood, does not so easily yield up its secrets as Miss Lazarus seems to think. Yet, if we are not mistaken, there are a number of Indian gentlemen in this State who, having spent a somewhat longer time in England than Miss Lazarus, will share an Englishman's indignation at what she says. It is for them to say how the excellent *hausfrau* stands in comparison with the Englishwoman. How many countries in Europe are there whose educational systems have produced women with the same breadth of knowledge, understanding and sympathy as the women of England? As to their homes, they are not run by machinery. The walls are not adorned with charts of routine, and the meals do not

fit into their places with a click. But there is no slackness, and everything is fitly and efficiently done—and the better done because the walls of the house do not bound the English housewife's vision, and because she can talk to her husband as well as cook for him. She is, indeed, exceedingly ignorant of biology and bacteriology and of "the chemistry of washing," but she knows exactly how to bring up her children, and guard against disease, and wash, or see to the washing. She knows because she has learnt these things from her mother. Her knowledge is practical, as this science-curriculum knowledge will never be; nor does she rush to her school notebooks in a household emergency, but at once, and by practised instinct, does what is right. And she has not wasted her precious schooldays on household matters the learning of which belongs to the home itself and begins, in England, in early childhood. It is true that English school curricula do contain instruction for girls in sewing and domestic science, and quite interesting and helpful it is; but it occupies a very small place in the curriculum, for in England we *educate* our girls. Perhaps Miss Lazarus' idea is that very many Indian girls do not learn domestic wisdom from their mothers, because the mothers do not know it. She seeks, perhaps, to remedy this state of affairs, and finds the school curriculum the only resource available. But she goes the wrong way to work. First, a little teaching in such matters goes a long way, and there is no need, or justification, for ruining the more profoundly educational part of the curriculum to introduce them. Second, instruction in the sciences Miss Lazarus mentions is an altogether wrong way of fitting a girl to perform her home duties. Those duties themselves should be taught directly, with just as much incidental theory as is necessary. Practical precepts are the thing, and practice wherever it is possible.

SIR WALTER RALEIGH AND HIS SUCCESSOR.—It is announced that Mr. G. S. Gordon, Professor of English in Leeds University, has been appointed to succeed Sir Walter Raleigh in the Professorship of English Literature at Oxford. It matters to the whole world who holds this Oxford chair, and Mr. Gordon's appointment would have been after Raleigh's own heart. To succeed Raleigh, so great as critic and as lecturer, yet so much more than either, might seem impossible to any one. He was infallible in judgment: in estimate or comparison he could be cool, deliberate and precise. But when true greatness was his theme, his work was swift and inspired. Of few critics could it so truly be said that their critical work was creative. He always added something of himself, and that self was of the order of the great creators,

so naturally did it apprehend the noble or the strenuous, whether in life or in literature, such ease of mastery did it show in all things. Raleigh takes permanent rank among the great writers of English prose. On the one occasion on which the present writer met him, Raleigh happened to speak of "a particularly good man" among the then undergraduates of Oxford. This was G. S. Gordon, then an undergraduate of Oriel, who many years after was to succeed him. They were long associated, for Mr. Gordon (who, like many other Scots, had proceeded from Glasgow University to Oxford) eventually became a fellow of Magdalen. He served, and was wounded, in the war, and in 1919 was appointed official Military Historian (Historical Section, War Cabinet). Even as an undergraduate he had been distinguished in historical, as well as in literary, studies, and had gained the Stanhope Prize for an essay on the Fronde. Though he has not as yet produced any critical work on a large scale, such essays as he has written show him to be a first rate critic, and a writer comparable to Raleigh himself. There is a certain kinship between them—for example, in their contempt for catchwords and cant, in firmness of grip, in athleticism of mind and speech. The pupil wrote thus of the master in the obituary notice in *The Times Literary Supplement*:—"He was, in his time, by far the most brilliant ambassador of his generation to the heart of the next. To meet a pupil of Raleigh's any time these thirty years, and only name him, was to bring a gleam into the dullest face. He will be missed in the High, and in all the happy Oxford meeting places, but principally for that greeting when he had eyed a friend far off, and his arm shot up like a mast. The houses and the little people seemed to fall away, as he bore down. It was like the peaking of a ship at sea." We quote these words because they remind one in an extraordinary manner of Raleigh's own utterance. It is as though, in those last sentences, one heard the voice of Raleigh himself; and one rejoices to think that so long as this pupil-successor lives that voice will not be utterly dumb in Oxford.—Of Professor Gordon's writings the most accessible to our readers is his essay on "Theophrastus and his Imitators" in the collection of essays, edited by him, "English Literature and the Classics." It is one of the most brilliant critical essays of our time.

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**BARYMATH AT HIS BEST.**—Since we ventured on the "Barymath and Bradymath" dialogue in last issue, we have come across an admirable statement of the Barymath doctrine—a doctrine which, good in itself but inapplicable to pass courses in Indian universities, has done a

great deal to discredit "literary education" in India. This exposition is contained in the Introduction of an excellent edition of *Hamlet* for Indian students produced by Mr. S. G. Dunn and published by the Oxford University Press some eight years ago. Mr. Dunn thinks that the Barmathian study of Shakespeare in India has much of the virtue of what he calls "the Oxford classical course." He writes :—

"The education in our Indian colleges is frequently depreciated as 'too literary'—a charge which, if it means anything, implies, it is to be supposed, that too much attention is paid to words and the use of them, and not enough to facts and the use of them. . . .

"Now, that classical education which for years has produced the most careful scholars in Europe is nothing more or less than a 'literary' education, and yet nobody would affirm that its methods tend to looseness of thought and inaccuracy of statement: the very opposite is its end and achievement. . . .

"One of the outstanding features in the Oxford classical course is the study of Greek plays, how thorough it is, or used to be. First of all one had to know all about the origin of Greek drama and the history of the period in which it flourished; the dramatists were examined in comparison with one another, parallel passages from their works had to be cited in support of any interpretations; the whole apparatus of textual criticism was used to ascertain the true 'reading' of particular passages; every allusion or possible difficulty was tracked home and fully mastered; and all this was merely preliminary to the discussion of the style, the plot, the characters, the story, the innumerable questions bearing upon life and thought which the tragedy might involve or suggest. The result of such study was to produce a habit of mind and of method truly scientific in those who followed it faithfully, and to beget in them a tendency to test, weigh, and carefully adjust to its proper proportions whatever might be presented for their examination, be it a book or a butterfly; so that those who got all which could be got out of that training were as well equipped for accurate, that is, scientific, research as any who had cut up specimens in a laboratory or looked through a microscope. . . .

"Now, in the plays of Shakespeare we have in India just such material for a training in careful scholarship as is provided in England by the Greek dramatists and similar classical authors. The courses in our universities should be so adjusted that the candidate for a degree in English should be encouraged to study, and have the time to study, the plays of Shakespeare in the thorough and scholarly manner which we have mentioned as the chief asset of the classical education."



This way of thought has its attractiveness, but unfortunately it has greatly lessened the value, and lowered the prestige, of western and of "literary" education in India. One little flaw means the collapse of the whole argument. Mr. Dunn is referring to *Honour "Moderations"* at Oxford, and not to the pass school, which is by no means of this kind. It is a curious idea that an exemplar for a pass course in India should be found in an honour course in England. Practically all the members of the educational services in India are honoursmen, and there is a tendency to forget that the vast majority of their pupils are passmen, with passmen's capacities and needs. Further, even did the pass course student in Oxford undergo the sort of literary discipline described, this would be no precedent for India. The average student in an Indian university has read but few English books, and as a rule English literature is the only great literature open to him. He has to get the best out of it that he can, and if he sacrifices much of his time to technical and linguistic study he is sacrificing the best boons of literature to the second best. What he needs is to read much and widely—with understanding but without such delay, and distraction from that which is most vital, as this method implies. The English student who studies Greek has English literature as part of his world, and in many subtle ways absorbs the culture of it even if he does not (as he always can) read widely in it. The Indian student has nothing corresponding to this advantage, and in a very large number of cases he comes from a home where literary culture is absolutely unknown. To his deepest needs such matters as the comparison of readings in a Shakespeare play are irrelevant, and therefore he has not time for them. Further, if he is compelled to undertake such work, he performs it with such incompleteness, and with such lack of background, as produces in him a constant sense of dissatisfaction and lack of mastery.—Finally, it is surely absurd to suggest that a training of this kind is as good a preparation for scientific study in the narrower sense as is a preliminary scientific training. It produces a very different kind of accuracy, and the procedure in which it trains men is different alike in aim and in method. It is indeed good for all men who are fit for it and have time for it, but has no special virtue in relation to the training of the scientist as scientist.

## THE TEACHING OF HISTORY IN SCHOOLS.

THE importance of history is never called in question, but is seldom realized. The teaching of history in secondary schools is rather ceremonial than substantial. History is taught because it must be, and it is learnt because it is taught. Truly is history the despair of students and the bugbear of not a few teachers. Although all can teach it, few indeed are those who can teach it well. Every history-teacher has his own method, wherefore history is of all school-subjects the most methodless in the teaching.

The history-teacher's work in the higher forms often resolves itself into coaching students for some public examination. To coach is easy to the teacher and gratifying to the students. His work in the lower forms is not even so good as coaching. It is either routine or chaos. "History for history's sake" is still an educational lip-service. Cram, that remarkable art of storing half-understood and indigestible information, has not yet ceased to attract school-boys in India and to clog their brains. History is an unfailing stimulus to cram.

The teacher can undoubtedly palliate the evil to a great extent if only he is willing to try. The reform must begin at the bottom. The teaching of history in the lower classes needs a system and an aim. What ought to be the aim of historical instruction for the young? History might benefit the students in a thousand ways that are too well-known to call for anything more than a passing reference. It might very well develop their imagination and judgment, and their so-called patriotic instinct; it might socialize them and impress on them the moral law that "justice and truth will triumph in the end," and do many other things besides. I have no quarrel with these functions of history, but while recognizing their importance I must maintain that no one of them, nor all of them put together, can constitute the real aim. Whatever be the extent of its educational value, it must be taught in such a way as to enable the pupils to enjoy it. The teacher must set it in interest and adorn it with enjoyment before he takes his history-lesson to his class. An appeal must be made to the emotions before a response can be expected. The dry-as-dust or the simply ceremonial can only end in stupor or dullness. Interest alone can lead to enjoyment and the desire to learn more. Divorced from interest, your lesson is but a burying of the dead past instead of the reviving of it, and even such good stories as that of Leonidas and his immortal three hundred will

stupefy a class if the influence of that powerful catalytic agent, interest, be not brought to bear on it.

It is clear, then, that the teacher's aim must be to get his pupils within the cordon of interest and to create in them an irrepressible liking for the subject. Let them look forward to the history-hour with unmixed delight. This is easier said than done. It means effort, zest, sincerity. It means a well-thought-out plan and thorough preparation. Personalities *must grow* and incidents *must take place* in the teacher's hands. It is the function of books to narrate; that of the teacher is to vivify and dramatize. How often does the story of Asoka fail to touch a responsive chord in juvenile hearts! Ten to one it is rendered drab and dull. But the present writer knows that the Asokan story has material admirably suited to evoke the enthusiasm of the young. It will not do for the teacher to make a sudden dive into the deeps of the past, and there to dwell on Asoka bookishly and artificially, if he has the welfare of his ward at heart. He should, on the other hand, take them along with him for a ramble through avenues of modern worthies of the Asokan type, and endow them with the necessary *apperceiving mass*. Further he has got to raise himself to the altitude of that monarch's piety or *dharma*, and feel as he felt so many centuries ago. His success is then assured. He will then be equal to the occasion and come off victorious.

We must now ask what historical "portions" should be prescribed for the young and how they should be handled in the class-room. The under-current of causes and consequences in history, its vast problems and constitutional evolutions, are manifestly above their heads. Even with regard to political history much care has to be taken in the selection of the suitable material. Children do not take kindly to lessons chock-full of dates and names. They want history with flesh and blood in it. They want heroes and heroic deeds. The matter-of-fact and jejune is invariably lost on them. For them is the storied past with its giant personalities striding across the historical stage. Give them stories, more stories and still more stories. That is the golden rule for the history-teacher of the young.

And of stories preference, wherever possible, must be given to modern ones. They are less strange and therefore they make a better appeal. What is called the regressive method in the teaching of history is strongly recommended to those who take classes below the fourth form. The pupils in these classes had better be taken up the stream of time, from the familiar to the unfamiliar, from the present to the past. This point requires emphasis, for instances of little children plodding

laboriously from central Asia or from where you will, through the vales of craggy Afghanistan, swimming rivers, losing themselves in the deserts or climbing mountains, cursing the muse of history at every step, understanding nothing, enjoying nothing, with fact-worn faces and minds, are but too common even in these days of kindergarten-regime. Let not children begin to learn history with the impression that it is gall and wormwood.

Again, there is a plethora of stories and a judicious selection is of the greatest importance. There are good stories and bad stories, moral, unmoral and immoral ones. They are found scattered broadcast in Indian history, and it is while teaching this subject that the worst sins are committed. Prithivi Raj's somewhat adventurous abduction, Padmini's daring trick, Muhammed ibn Taghlak's insane excesses, Akbar's match-making activities, such story are certainly unsuitable for the young, not only because of their indifferent morality but also because of the almost irresistible inclination of teachers to overdo them. At best they can only afford a sort of amusement that is unhealthy and by no means true "enjoyment." Not a few are the instances which the present writer can cite of much harm caused by historical stories of little educational value and dubious moral appeal. The stories selected therefore must be stories of chivalry, heroism and patriotism. It is not suggested that the world of wickedness must be systematically screened away from the vision of the young, but the tendency to remove such a screen with wanton disregard of the interests of the children, and to lay bare the seamy side of life before them, is, to say the least, reprehensible. If it is not always possible to make history-lessons edifying, the teacher can and must see to it that history does not become an instrument in the hands of the Evil One.

And now let us pass on to the presentation of the matter selected. Text-books in history for the lower classes are nearly an impossibility, for, however good they may be, one cannot rouse interest by their aid. The emotional side of history, its dynamic aspects, its realism, its life—these cannot be expounded well and fully from the printed page. But it is exactly such things that catch the attention of the young, that make a vigorous and healthy appeal to their imagination. The teacher who depends on the text to take him safely through the history-class becomes a drudge and a bore. He fails to get a hearing, and the sands of respect for him run out with ominous speed. Indiscipline stares him in the face, and he despairs. The children suffer even more, for they can seldom get any glimpses of true history from the mirror of text-books. They often get the idea that history has had little

existence outside the printing-house, just as they sometimes think, or rather are led to think, that all the world is the atlas and nothing more! Let not the history-teacher, therefore,

“Ram it in, jam it in,

Slam it in, cram it in.”

Alas! the author of these significant lines does no more than call a spade a spade, when he writes—

“Faces pasty, pinched and pale  
Tell the plaintive, piteous tale;  
Tell of hours robbed from sleep,  
Robbed from meals for studies deep.  
All who 'twixt these millstones go  
Tell the selfsame tale of woe;  
How the teacher crammed it in,  
Rammed it in, jammed it in,  
Crunched it in, clubbed it in,  
Pumped it in, stumped it in,  
Rapped it in, slapped it in,  
When their heads were hollow.”

In the lower classes, the rôle of the millstones is performed by text-book and teacher, the pupil being crushed between them.

Cast away crutches and stand on your own legs. There is a royal road to success in the teaching-profession, and that is *self-reliance*. What you require is not historical pellets in the form of handy primers which can, at best, only suppress the symptoms of ignorance for the time being, but source-books, big volumes, history in its true dimensions and in all its glory, to which alone you may trust your fortunes in the profession. Be a store-house of information yourself. Do cultivate a love of books and “the reading habit,” and live with the great masters of historical composition, seeking inspiration and guidance at their hands. The reward shall neither be long in coming nor small when it has come. For you shall be bold and beloved, resilient, resourceful, interesting, one who can cast a magnetic spell over his little listeners.

In this connection one thing to be urged is that the lower classes, even more than the higher ones, require the services of the ablest and best qualified teachers. But the present day school-organization has a partiality for putting things topsy-turvy. It is often found convenient to forget that the text par excellence in history for the lower forms is the teacher himself. His living voice is to his pupils almost divine. It alone can enable them to *relive* the past. And the most suitable method for him is one of lucid and lively narration, of judicious and

life-like dramatization. No other school-subject can clothe the young in such a wonderful mantle of interest as history. If it fails to do that, woe to both teacher and taught. Teaching is the next-door neighbour of the histrionic art, and the teaching of history is the most dramatic kind of teaching. The great secret of the actor's success is that he "feel his part" warmly and sincerely. Even the most artful make-believe will be unnatural. The following four simple words are an excellent guide for him who would be guided—*knowledge*; *interest*; *love*; *action*. *Know and love your subject*; *love your work*; *do your lesson*.

Before concluding, it would, perhaps, be well to add a word or two on a great subject and a big bother—the medium of instruction. That the vernaculars of India should attempt to set themselves against the English language is not merely unfortunate but also painful and petulant. If an all-India language is not mere moonshine, the honour of aspiring to that exalted position falls to English alone. Even to-day when English cannot, as yet, be said to have made much headway in uniting linguistically the whole of this vast land, it is the only channel that affords a means of communication between one Indian and another living in a different part of the country. No reasonable person will stand in the way of encouraging the study of vernaculars, but few indeed will subscribe to the contention that their encouragement is to be effected by the discouragement of English. Such a view, to put it mildly, is perverse and detrimental. It is not easy to exaggerate the amount of benefit that the Indian vernaculars have received through their contact with English. Yet one finds rivalry between them instead of goodwill and respect. And not a few try to fan it into flame. The tendency is petty and parochial. The study of English must be vigorously pursued both for the good of the vernaculars and for the good of India.

Such being the case, there is no question as to what the medium of instruction should be in Forms IV, V and VI. Even in the lower classes, the exclusive adoption of English for the purpose of imparting instruction is not attempting the impossible. Many have done it, and done it well. This, however, puts an extra impost on the pupils' understanding, and hence their interest often flickers. The teacher has to employ all the weapons in his armoury to see that understanding is not baffled and interest extinguished. The exclusive use of the English medium in the lower classes means a tremendous strain on him to which he may not always be equal. It is killing two birds with one stone, but it is not an easy task, nor can it be demanded of all. What is

feasible is the use of a bilingual medium—English and vernacular. The stories may be told in both languages, first in the vernacular, then in English. Let the pupils answer questions in either language. It might be objected that this method is one of threshing the same corn over again, but remember that it is not threshed a second time with the same stick. It will be found that the change of medium is alone sufficient to endow the subject with a fresh lease of interest. If the method involves an additional expense of time, it not only makes deeper impressions on the juvenile minds but also gives an impetus to the study and appreciation of English which, to say the least, is no small gain. The outlay is negligible compared with the return.

N. K. VENKATESWARAN.

## THE NATURE OF COMEDY.

### I

It is impossible to define comedy, and even the most innocent statement about it is dangerous, for one is apt to think at once of some indubitable comedy to which the statement does not apply. Precise description is eluded by comedy just as by a national "type," the spirit of an age, "classicism," "romanticism." The case is not quite the same with tragedy. Man erring, yet noble, up against a fortune that uses his failing for his downfall—this is the essence of tragedy, whether the failing be small or great, whether the fortune be an ancestral fate or mere bad luck, whether the struggle involved be external warfare or the subtle warfare of the spirit. It may be said that Aristotle, and Greek practice, admits a very different sort of play, that in which the hero neither errs nor perishes, destruction being confined to the wicked. But Aristotle realised that this is not truly tragedy: such matter he said, is not "perfectly tragic," but is a concession to the public taste and to the general inability to endure the highest tragic tension. The pleasure it produces "is not the distinctive pleasure of tragedy. It belongs rather to comedy." There is variation only in unessential matters between Aristotle's idea of tragedy and modern practice, and such Greek tragedies as have a "double ending," good for the good and bad for the bad, are in that respect untragic.

Comedy, however, may be an infinite variety of things, varying in theme, purpose, method, attitude and tone. Attempts at comprehensive statement regarding it have been conspicuous failures. The gist of Aristotle's definition may be given thus,—“Comedy is an artistic imitation of such human shortcomings as are ludicrous, and have no painful element, and do no harm to others.” This rules out with equal emphasis such contrary types of comedy as the Shakespearean and that of Molière. Schlegel, in declaring that comedy is purely sportive, showed how little he realised its scope. Meredith takes as the true standard the intellectual and satiric type of Molière, and the kindred type of Congreve, and to him the comedies of Shakespeare are not comedies at all but simply romantic plays. None of these exclusions can be acquiesced in, for all these and certain other types of play are felt, amid all their differences, to be essentially one. They are all comedies. They all present life from a point of view precisely opposed to the tragic.

Tears are simple and explainable compared with laughter. Our



tears are a symbol of the unity of all races and all generations; our laughter is the symbol of our differences. And laughter is the more characteristic. It is an index to both heart and mind. It distinguishes man from man and race from race, and its indications are almost infallible, for it is very hard to pretend mirth without detection—much harder than to deceive with sorrow. Laughter, then, is the sincere utterance of man, revealing thought, disposition, culture and race. However comedies may differ, laughter is the essence of each one of them. Their function is to arouse laughter, and they are written in a spirit of laughter. Thus, since laughter varies with men and races and times, comedy will vary similarly, and to each kind of laughter there will correspond a kind of comedy. Evidently, that which can vary so much is scarcely to be defined. The word "laughter," however will serve as the best clue to the essential nature of comedy.

To begin with, there are certain things with regard to which men cannot laugh at all—things irreconcilable with that complacent and cheerful mood required by happy laughter, and even with the feeling of security and certainty which is necessary for satiric laughter. We cannot laugh at, or be cheerful about, vice, death, the mystery of human pain. Comedy, therefore, must have to do with none of these things: they lie beyond its sphere. In this limitation of comedy lies one of the most important distinctions between it and tragedy. All these sad matters that we have mentioned belong to life. It is the business of drama to "hold the mirror up to nature," yet we must cut out a part of life to make it fit for comedy's mirror. Comedy must "avert its ken" from a great part of human fate, while tragedy seeks a steady vision of the whole of life, hiding nothing, extenuating nothing. However realistic comedy may be, its world is an abstraction. That serious, profound kind of wrongness upon which tragedy depends is constantly making its appearance in life: few days pass without its touching somehow any man who is really taking part in the world's business. In comedy life is to be so far falsified that this, which is of the essence of life, shall not appear, and only shallow and passing wrongness shall be allowed to disturb us. The incongruities that comedy represents—whether in character, circumstance, or event—may be excessively annoying, but they must not belong to the deeps either of human nature or of fate. Moods, peculiarities of disposition, of looks, of dress, of manners, a passing unkindness of fortune, a set-back for the moment because of the working of curable (in many cases soon-cured) human badness—such is the matter of comedy.

Obviously the laughter-spirit demands two things as to the end of a comedy—first, that it should be "happy," and second that it should

be a decisive end with real finality. In order that pleasurable excitement may be produced, things must go wrong before they go right, and the worse the tangle the greater the enjoyment. But even *apprehension* of real disaster would be too disturbing, and both by the general tone of the play and by judicious hints the dramatist conveys to us, quite early, that all will eventually be well. At the end this must come to pass. There must be no fears as to the future, no difficulty must remain unmet, no problem unsolved. In tragedy there can be no such finality. There cannot, of course, be the finality of despair, since the despairing view cannot produce art, or if, by a freak, it did so that art would not be accepted by men. Nor can there be the finality of clear security and perfect understanding. Life is represented in its totality, but life is not a rounded whole; its deepest contradictions are unreconciled, if not irreconcilable, in the mere human vision. In the supreme, universal whole the contradictions may disappear, but this whole even the tragic poet cannot discern. Hints and intuitions must suffice him as he strives to see mortality as a god, beyond our sphere, might see it. Thus, dealing with the whole of life, he deals with it incompletely, whereas the comic poet deals completely with a part of life. Tragedy, seeking to deal with the whole, is itself fragmentary: comedy, confessedly content with the part, is complete. The writer of comedy must produce a satisfactory solution for the problem of his play out of this world's own materials, neither postulating nor suggesting anything more. He must end the chapter he has opened must set entirely right that errant course of events that has been his plot. And even if the conflict he has represented be in itself eternal (as, for instance, the conflict between the superficiality of his people's thought and lives and the reality which they do not discern), his particular manifestation of that conflict must be completely settled.

On the way towards settlement, however, it is the privilege of the writer of comedy to play any number of tricks upon us. In a sense, of course, we know that he is tricking us. Any play which counts as a play is meant primarily for acting, not for reading, and must be thought of in relationship to theatrical performance; and after the first night all the details of its working out may be presumed to be known to every spectator. No-one is deterred from attending the theatre because he knows all about the play. Thus the deceptions of the dramatist are really seen through completely. But we pretend to ourselves not to see through them, and we enjoy an imaginary puzzlement, curiosity and suspense. The dramatist may, in comedy, pretend what is not true, hide or distort the truth, raise expectations not to be fulfilled, deliberately persuade us of the impossibility of that which he is about to bring to

pass. He may mock and delude us to the top of his bent. Here again the case is different in tragedy, where the case is too serious for trickery. Neither our tense anxiety ere the hero sins fatally or as sin leads gradually to doom, nor the momentary and very faint gleams of hope which, in Shakespeare, sometimes appear just before all becomes quite dark, correspond to the delusion of the spectator of comedy.

The kinds of comedy vary with the moods of laughter and with all that is related to laughter. There are the different ideas of different people, different races, different times, as to what is incongruous, for what to one seems anomalous may to another seem natural, and may be normal within a certain range of experience. Such differences of view in the individual dramatist depend partly upon environment and partly upon disposition. Ethical standards vary from country to country, from time to time, from person to person; and variation in standards of manners is still more conspicuous. Conduct is part of the matter of comedy, and manners are frequently a yet more important part. And as the individuality of the writer of comedy appears in his *judgment* it appears also in his *attitude*. A recognised anomaly may be merely amusing to one, and contemptible to another, while to a third the spectacle may afford a cynical delight. The dramatist's sympathy may be so wide and generous that he finds nothing in humanity alien to him, in which case even his rebukes will be kindly, and his laughter will be without contempt or cynicism or even aloofness. On the other hand, he may be unsympathetic, with any degree of unsympathy, ranging from mere coldness to contempt and from contempt to bitter hostility. Thus comedy may be, and often is, purely intellectual, while if it is emotional its emotion may range from positive love to positive hate on the part of the dramatist. Again, some choose to deal with the special life of their own country (or even city) and their own time, others with life in a more general sense and in a scene whose remoteness makes impossible the particularity of detail natural to the play of contemporary life. Sometimes remoteness of scene gives opportunity for a highly idealised picture, and this may become well-nigh symbolic, so free may it be from the trammels of the local and the temporal. Yet another kind of difference arises when one considers the purpose of the dramatist. Sometimes it is purely artistic, the artist seeking æsthetic satisfaction for himself and for his audience. On the other hand there are writers of comedy who assume the role of reformers, and make reforming satire of their work. Such satire, as a rule, is directed against the follies and affectations of contemporary society.

(To be continued)

J. C. ROLLO,

## INDIAN ART (IV).

### V

I HAVE endeavoured to discuss two or three important features of Indian art, which it will be useful to sum up here. Indian art traverses the longest period known to history. European, Chinese and Mohamadan art are of comparatively recent origin. Indian art has assimilated many foreign influences, but has succeeded in maintaining throughout the long span of centuries its own individuality. In Indian art the individual is everywhere. The prominence given to individual feelings and thoughts is characteristic of India. An Indian temple differs from a church in that the individual, and not the flock, offers his prayer at the shrine. In music, in painting, in sculpture, this predominance of the individual is very marked. The subjective tendency is very strong in the works of Indian art, and the inward and the Godward direction of an Indian's perceptions and thoughts are beautifully translated into the language of sound, form and colour. This leads us to the most important feature of Indian art, its religious character. We have seen how a reviving religion has always encouraged art, how religious revolutions are followed by periods of great artistic production. The support given by kings to religion commonly took the form of support to art. A great victory of a religious king meant additions to art by the building of new temples, the carving of new images, and the writing of new poems. Asoka was one such great patron of Buddhistic art. The Chola dynasty also gave great support to art. Foreign critics have often failed to catch the real spirit of Indian art, and have arrived at conclusions of thoroughgoing denunciation. What is objected to as conventionality in Indian art is really no conventionality in feeling and genius, but in certain prevalent art methods. What the Indian artist tries to depict is not the outer and physical aspect of anything but the inner and spiritual aspect. This is why he is irrationally accused of ignorance of the rules of aesthetic creation. The various gods sculptured by the Indian artist are so many vehicles for conveying the feelings and images roused in him in his fulness of heart. Further, the foreign critic forgets certain physical differences between other countries and India and is therefore tempted to make undeserved objections. The Indian painting has been accused of being too mild in character. Its

mildness is unavoidable seeing that, being accustomed to the glare of the tropic sun for the greater part of the year, the artist delights in the sombreness that he transfers to his paintings. Another objection is that the Indian sculptor is incapable of carving out realistic images. Objection is taken to the too smooth features presented by the Indian images. This objection arises because the critic being accustomed to the twisted and knotted muscles of Greek figures forgets that Indian limbs are much smoother and more rounded than Western. Indian music has been characterized by Mr. William Archer as "tinkling melody" as against the western music, which he describes as possessing "titanic harmonies." Mr. Archer is a very poor critic in this matter, and sadly ignorant of India. He does not realize that India is a land where God manifests Himself not only in thunders but also in the smallest of flowers, in the feeblest of voices. The Indian vina and cithar are of one string and one idea. There are no huge Hogarth paintings in India. In India, Hayden and Beethoven are as out of place as Thyagaraj and Tulsi Das in Germany. To the west all art is an end in itself, objective in character while to the Indian art is a means to the realization of the Infinite.\* The Indian sees in the finite the image of the titanic infinite. He considers art as accessory to religion. Art is to him a synthetic method of approach to Divinity. Through art he comes to see that everything is a part of the Divine Whole. The successful realization of this in his subjective consciousness is the highest pleasure that he can ever hope to derive from art.

If we open our windows today and look out, the first thing that strikes us is the squalour, poverty and wretchedness of India. What wonder is this? Where is the visionary India of the past, described in glowing words by every writer from Fa-Hein down to Ruskin? Enter any bazaar or market. What do you see there? Best English steel trunks, the cotton piece goods of Bombay, the plain red saris from Manchester, the gramophones, aptly called by Dr. A. Coomaraswamy as the "voice of the living dead." Where are your sandalwood and ivory carvings, where are your Dacca muslins, and the wonderful Kashmir shawls and carpets? Where are the beautiful brass vessels and decorated pots? Echo answers—where? Look at the cheap enamelled wares of Europe,

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\* The writer has an entirely wrong idea of western art, as Mr. Archer apparently. has of Indian. Western art, like Eastern is spiritual in its significance, and the world has never known a more profoundly spiritual genius than that of Beethoven.  
—Editor.

used in every house, look at the kerosine oil tins used to draw water from the wells in the place of the decorated brass pots of old. Look again at the Indians, living in bungalows built in bastard style, and sitting in their arm-chairs in the verandahs, surrounded by German oil-paintings and listening to the gramophone records of the London music halls. Look again at the banyan tree roots eating into the precious temples and carvings. What do all these things indicate? They surely indicate an absence of artistic feeling and appreciation, a wide spread desire for cheap and nasty things and in fact a state of extinct national individuality. The arts are now become for the most part stereotyped, devoid of imagination and originality. The workman's interest and joy in his work are gone. the living forces of religion are failing. How then can we get good art? Art is an index of the individuality of a nation. One cannot say why art flourishes in one country and at one time and not in any other country and at any other time. But we have good evidence of an improving state of things. The All India Musical Conference, the poetry and prose of Tagore, the paintings of the Bengal and the Bombay Schools, the revival of the Telugu drama all testify to a general tendency towards renewed artistic production. Let us remember that a nation without art is blind and dumb, that art is one of the noblest elements in national life.

I cannot better conclude this essay than by quoting in full the notable lines of the thirteen European artists in reply to Sir George Birdwood's incautious remark quoted at the beginning of this essay.

"We the undersigned artists, critics, and students of art . . . . find in the best art of India a lofty and adequate expression of the religious emotion of the people and of their deepest thoughts on the subject of the Divine. We recognize in the Buddha type of the sacred figure one of the greatest artistic productions of the world. We hold that the existence of a distinct, a potent and a living tradition of art is a possession of priceless value to the Indian people, and one which they, and all who admire and respect their achievements in the field, ought to guard with the utmost reverence and love. While opposed to the mechanical stereotyping of particular traditional forms, we consider that it is only in organic development from the national art of the past that the path of true progress is to be found. Confident that we here speak for a very large body of qualified European opinion, we wish to assure our brother craftsmen and students in India that the school of national art in that country, which is still showing vitality and its capacity for the interpretation of Indian life and thought, will never fail to command our admiration and sympathy, so long as it remains true to itself. We trust that

while not disdaining to accept whatever can be wholesomely assimilated from foreign sources, it will jealously preserve the individual character which is an outgrowth of the history and physical conditions of the country, as well as those ancient and profound religious conceptions which are the glory of India and of all the ancient world."

N. MADHAVA RAO.

## BUDDHISM AND QUIETISM.

BUDDHISM has commonly been understood to teach passivity. Denial of a deity, and denunciation of all activities are supposed to be the two cardinal principles of Buddhism. The quietist ideal of a life of passive contemplation may have been upheld by the representatives of a decadent age of Buddhism. But the constant teachings of the Buddha, no less than that of his followers in the heyday of the religion, are a living refutation of this notion.

"It is true, Simha, I denounce activities, but only the activities that lead to the evil in words, thoughts or deeds. It is true, Simha, that I preach extinction of pride, lust, evil thought and ignorance, not that of forgiveness, love, charity and truth." In these noble and inspiring words does Lord Buddha command Sadhu Simha, and through him the whole world, to act and feel the living present. It is as though, the Blessed One felt even then possible misinterpretation of his teachings and tried to forestall any gradual weakening of the zeal and understanding of his followers.

Lord Buddha found for himself how inane and futile was a life of austere self-mortification or *tapas*. Having found the utter waste of human powers in the life of *Samadhi* only, he came out to the arena of the busy and "sinful" world to combat the waste and misery of human life. Contemplation or *Samadhi* was, to the Buddha, only a time of rest and recuperation of his powers for a greater and fuller life of activity. "After taking rest," says Oldenberg, "Buddha would be again ready to address a vast concourse of peoples and disciples." He was, as it were, the strenuous knight-errant, ever seeking degraded and sorrow-stricken humanity and trying to lift it to the sunny heights of hope and consolation.

Not content with his own life of simplicity, moderation and activity, he founded a great organisation, the *Sangha*, for the carrying on of his noble mission of uplifting sinful mankind, "to beat the drum of immortality in the darkness of the world." "Go ye now and roam over the country for the welfare of the many, for the good, for the gain, and for the benefit of gods and men." (*Vina pitakā*). Such was his command to his followers. This monastic system based on the perennial principle of "equality of opportunity" for the really deserving, reveals the



great organising, *practical*, genius of the founder of the so called religion of passivity.

Asoka, the ripe fruit and culmination of the veritable teachings of the Blessed One testifies—no less than the founder—to the attention paid by Buddhism to the life of this earthly world. The life of Asoka is the record of one of the greatest emperors of the world, ceaselessly toiling for suffering humanity. "Work I must for the public benefit"—so declared Asoka, and the pious ruler of men was ever obsessed by the sense of the incompleteness of his work and activity. Says the emperor,—“I am never satisfied with the amount of my work nor the promptitude of my decisions.” One-third of mankind has cause to remember with gratitude his work and his example. The true votaries of Buddhism were never content with the mere “conquest of Dharma,” although this was to them “the greatest of conquests.” They catered as much for the *material* as for the *spiritual* needs of the community. The work of Asoka in constructing numerous tanks and harbours for the wearied travellers, hospitals and caravanseries for the sick and needy, for both man and beast, are well known, and other less conspicuous Buddhists have been impelled by their religion to a similar generous activity. The Buddhist monks, like the friars and monks of mediæval Europe, were harbingers of culture and leaders of colonisation in their day. Wherever they went, whether to the lonely forests of Mysore, or to the islands of the Pacific, they assiduously cultivated, and commended to the natives of the place, the Aryan culture and the Aryan discipline. Like the mediæval monks of Europe they constructed or carved splendid edifices and caves as, “fitting emblems of the soaring ambition” of Buddhism. The monasteries of the Buddhist monks were both religious centres and repositories of literature and art.

Neither did Buddhism foster “pessimism pure and simple.” The religion itself was the product of a spirit of revolt against the “evils” of the mundane world. In the words of Mrs Rhys Davids, “Buddhism preaches not so much resignation to evil or ill, as revolt and escape from evil or ill. No gospel is wholly pessimistic that sets high value on a certain possible ideal of Life.” Such a spirit of revolt presupposes and calls forth a certain degree of courage and faith in a better future, or way of life. And the Buddhists “sacrificed mere quantity of life” that they might gain intensive fulness and more highly evolved quality of life. What the “theras” or “elders” of the church did was “to *concentrate* their energies” to *bring out* and *enjoy* the full possibilities of their *ideal* life, rather than to seek escape from the earthly existence. Their songs but breath forth the spirit of serenity and *rapture* that they had attained in consequence of *fulness* of life.

No doubt, centuries after the passing away of the great Gautama, the purity and sublime simplicity of his religion were gradually forsaken by many of his followers. Religions tend to degenerate. they need revivifying by recollection of their earliest inspiration.

V. RAGHAVENDRA RAO.

## INDUSTRIAL DEPRESSION IN EUROPE.

THE Great War imposed many artificial restrictions on industry and trade, and strained very much the forces of production. Labour was drawn for fighting on the battle field. Capital was attracted, through government loans, to finance the war. Ships were used for war, and, insurance and freight charges increased enormously. The ocean was disturbed; artificial restrictions were imposed on the free movement of the precious metals; currency was inflated through the free issue of paper money. Credit was limited. All the productive forces were diverted to a destructive end. A large amount of capital which normally would have been saved was destroyed. Thus the war's destruction was not limited to the field, and the war is largely responsible for the troubles that have followed its close.

Capital is nothing but saved energy. The factors of production, when made to react on each other, yield utilities. A major portion of these utilities is used in consumption, and a part is saved which serves as capital in further production.

War is a machinery of destruction. The energies used in war are therefore used for a destructive end. War consumes not only past savings of capital and wealth, but also present energies. The past savings used up in the last war are represented by the allied war debts amounting to more than £40,000,000,000, not to consider the amount of capital used by the enemy countries to finance their war operations. In addition, the utilities produced by the factors of production during the war, were used for a destructive end, instead of for a constructive end and to save wealth. The loss of life in the war is another factor. Much labour which would have been utilised as one of the factors not only in present but in future production has thus been destroyed.

We have also to consider the ships sunk, the houses pulled down, the bridges, roads, factories, railways and other assets and instruments destroyed by the war. A bridge, for example, represents a fund of utilities created out of past saving for future use. Some materials, capital and labour were devoted to the creation of that fund, and if now it is destroyed, it means the destruction of that particular fund of utilities created by the combined effort of the factors of production. And that fund, which, if it had not been destroyed, would have helped in further production, has now itself to be replaced. Such is the case with regard to properties destroyed by the war.

The war destruction is therefore unimaginable. It is easy to destroy a thing, but not equally easy to replace it. It requires much effort. It is this effort to replace what is destroyed by the war, that is to-day engaging the attention of the greatest statesmen of the world. This effort, with all the hindrances on its way, must continue until a normal state of affairs is attained.

With the close of the war, the various artificial restrictions were removed. It was expected that commerce and industry, freed from restraint, would soon return to a normal condition. But quite the contrary thing occurred. Prices began to rise, contrary to the expectation that they would begin to fall. The main impulse came from the release of the buying power which had been in restraint during the war. The rise of prices gave rise to speculation, which in its turn accelerated the rise. Sales increased with the demands of the consumers. Production was rapidly increased in expectation of demand, and on the basis of the current demand. During the war expansion of credit through price inflation and speculation was restricted artificially through governmental "pegging" of the exchanges. After the war it was let loose, and the huge volume of credit was permitted to diffuse itself.

This diffusion of credit and the removal of the other restrictions gave rise to a temporary industrial boom and to speculation. But the boom was not real. It did not rest on any economic prosperity in the world at large. It was only the result of the diffusion of credit and the removal of the many artificial war restrictions. The boom was, to some extent, helped by favourable monsoons in countries like the United States of America and India which supply large quantities of the raw materials of the world. In the case of such countries the boom was to some extent real. It was the result of their continuous war prosperity. The strength of the boom in these countries gave a certain apparent reality to the boom in the European Countries.

Now this boom increased the economic evils caused by the war. Prices rose to the highest extent possible. A large amount of capital had been destroyed by the war and now the boom gave impetus to the floatation of numerous industrial companies for which funds were eagerly provided by the utilisation of all the resources that an investor could command. The war alone, as was said before, made the Allies incur a total national debt of more than £ 40,000,000,000 and in addition to this heavy burden, the boom through high speculation attracted a large amount of floating capital to be locked up in industries. The resultant evils are obvious. The private and public purses were drained to the bottom. The purchasing power of the nations was brought to the

lowest level and the commercial outlook became most gloomy. During the period of boom the traders were very optimistic of trade conditions, and being encouraged by the current demand they placed large orders for goods without in the least fearing a fall in demand. The huge orders could hardly be carried out by the industrialists, and naturally they took a long time to supply the goods. Thus the goods began to arrive at a time when the trade boom had disappeared and the demand had slackened. Goods could not be cleared and were heaped up in dock-yards. In the absence of sales financing these became very difficult. Extreme money stringency was felt and the Bank of England rate reached 8% or more.

The Asiatic countries during the same period met with poor monsoons and a universal influenza epidemic which carried away a population of six millions from India alone. This served as an additional burden on trade. Famine set in, and the poor monsoon combined with the famine made the markets gloomy in the extreme. Even the European markets suffered from these disasters.

The next factor that contributed towards the depression was silver. The production of silver had considerably slackened during the war years whereas the demand was continuously on the increase. India and China with their prosperous war trade, were continuously demanding silver, and the United States the home of silver production, was also in need of the metal. These factors contributed to a great rise in the price of the metal, from about 27d. per oz. in the pre-war years to nearly 90d. per oz. in 1920. The Eastern exchanges fluctuated considerably on account of these and other factors. Soon after the boom period was over the price of silver went down to about 33d. per oz. "What upset British business was the sudden drying up of the overseas markets: India, China, Australia, South Africa, and South America, and it was the collapse of the exchanges between London and many of these centres that threw out the calculations of the world. If we compare February 1st 1920 when the boom was in full strength though drawing to an end, with July 1st 1921, we find that . . . the values of the currencies of India, China, Argentina, Brazil and Chile in terms of British sterling had fallen by 51 per cent, 60 per cent, 35 per cent, 59 per cent and 54 per cent respectively"—(Keynes). What does this mean? The East may generally be considered the home of raw materials. The East exports raw materials to the West, and imports manufactured goods from the West. Therefore, in normal times the trade between the East and the West is active. But when the Eastern currencies

were upset in relation to the currencies of the West, the trade between East and West was, for a time, completely stopped and only recently have appeared the signs of its revival. The complete cessation of trade between East and West meant that most of the industries of the West which were run to supply the needs of the East had to be closed, thus contributing to the Industrial Depression in Europe.

The destruction of a vast amount of capital in European countries has necessitated the creation of baseless credit to finance trade and industries. This process has unfortunately been extended beyond the prudent limit and has thereby upset the exchanges of European countries. Though the war might be said to be the root cause of the present dislocation in European currencies, the insistence on reparations payments has done much towards this end. No country can prosper on the ruin of another. The economic prosperity of one country requires the prosperity of countries in its neighbourhood. A country prospers by producing commodities for which she has advantages over others and by importing from other countries commodities which she cannot produce herself. The Allies by preventing the rehabilitation of enemy countries, are indirectly putting off the day of their own economic uplift. The reparations payments are putting too much strain on the shoulders of Germany. On the one hand Germany has not been able to balance her budget, and on the other the reparations payments are ruining her finances. A heavy burden on the German Government means a heavy burden on German industries and other factors of production. The financial failure of Germany is apparent from her present exchange quotations. The German mark is now (18th August 1922) at about 4,500 marks to the pound sterling, as against her 20'43 marks parity to the pound. There are other countries in Europe whose economic condition is to-day worse even than that of Germany. Russia and Austria are bankrupt, and until the economic condition of these countries is improved there can be no hope for the betterment of Europe.

The European countries have been making a very bad use of their State Banks and printing presses. Multiplication of currencies has been extended. Paper money has been created with no restriction of its issue and even now the issue continues with little regard for its effects on industry and trade.

Inflation has therefore been one of the causes of the present dislocation in European currencies. The following table shows for the different European countries, the relations between their issue of paper money and their gold holding in July 1914 and July 1922 respectively:

	July 1914		July 1922	
	Paper Money	Gold Holding	Paper Money	Gold Holding
France	..	..	36,000,000 francs	5,000,000 francs
Germany	..	..	157,000,000,000 marks	1,000,000,000 marks
Italy	..	..	13,000,000,000 lire	1,400,000,000 lire
Belgium	..	..	6,000,000,000 francs	328,000,000 francs
Austria	..	..	439,000,000,000 kronen	1,700,000 kroner

## INDUSTRIAL DEPRESSION IN EUROPE

These figures tell their own tale. The present exchange quotations run parallel to these figures. On the 7th July last, the Paris franc was quoted at 55·8 francs to the pound, against its 25·22 francs parity. The Berlin mark was quoted at nearly 1,500 marks to the pound, as against its 20·43 marks parity. According to the telegram on the 18th August 1922, the quotation was at about 4 500 marks to the pound. The Polish mark as quoted on the 7th July 1922 was at 23,000 to the pound, as against its 20·43 marks parity. On the same day the Austrian exchange was at 94,000 kronen to the pound as against its 24 kronen parity. These figures indicate the present hopeless condition of European exchanges. The figures show also that the financial situation of the enemy countries is hopeless in the extreme, if it is compared with that of the Allied countries. So that any further burden on the enemy countries will to that extent postpone the recovery from the present industrial depression.

Excess of imports over exports is another factor which has contributed to the dislocation in the European currencies. Owing to the destruction of factories and other means of production, the productive power of European nations has been greatly curtailed whereas their consumption cannot go down below a certain minimum. In May last, Germany had an adverse balance of more than 5,000,000,000 paper marks. Austria had an adverse balance of 43 000,000,000 kronen for the year ending 1921. The position of Poland and Russia was even worse. The chief imports of these countries are coal and food products. If the import of coal is stopped the countries have to close their factories. If the import of food stuffs has to be stopped they have to starve being unable to produce even 75 per cent of their requirements. One may say that here should intervene the economic principle of the adjustment of imports and exports after a flow of gold either way. But these countries have no gold to send out. And not having materials to spare they have very little to export to meet the adverse balance. But they cannot stop their imports. So that the only way open to them to meet the adverse balance of trade is through the issue of promises. If to-day these countries are asked to stop the issue of their paper currency, they will thereby be asked to starve.

Another equally important factor that has contributed to the dislocation in European currencies, is the inability of the States to balance their budgets. France expects a deficit of 3,900,000,000 francs for 1922, which amount has to be made good by Germany through the reparations payments. Austria expects a deficit of nearly 400 billion kronen. By resorting to the free issue of paper money to make up their deficits these



countries are bringing about depreciation of their currencies. Depreciation in the currency means a corresponding rise in prices, which again brings an increase in state expenditure. The deficit so caused has to be made good by increased taxes. As is well known the chief revenue of European countries is derived from taxes on industry and commerce. This means a heavy burden on the already overburdened industry and trade. Extra taxation on industries brings corresponding increase in prices. This will again involve the states in more expenditure. More expenditure means again a further deficit which has to be made good by the issue of paper money. The issue of paper will again bring increase in prices. Thus we have a vicious circle.

We have again to consider the question of interest payments on the heavy debts incurred by the Allies and enemy countries during the war. During the war, the European nations, with the resources of pre-war prosperity, were in a position to bear high taxation, part of which could have been utilised to finance the war. But instead of submitting to extra taxation for meeting a part of the war demands, the allies financed their war operations mostly through loans, very little money coming for this purpose from any taxes on their own subjects. The leading countries expected to clear off their debts by extracting reparations from Germany. But now they are gradually realising that any burden on the shoulders of Germany will be to their own disadvantage. Their economic recovery will to that extent be postponed. Having, therefore, failed to get their expectations from Germany, the allies are forced to levy more taxes on their own subjects. This is a further burden on industry and trade.

Yet another factor contributing to the continuance of the present European industrial depression is the serious competition of countries like America, Canada, and Australia, and the Asiatic countries like Japan, India and China. These countries have gained strength and have accumulated immense wealth as a result of their war prosperity. Japan's national pre-war wealth was estimated at about 3,500 million yen, and in 1920 it was estimated at about 9,000 million yen, representing an increase of about 200% on the pre-war level. America and to some extent India, China, Australia, Canada, and the neutral countries of Europe have also increased in wealth; they have prospered at the cost of the countries engaged in war. What do the heavy war debts of the allies and enemy countries represent? They represent mostly the cost of the materials supplied by the countries not engaged in war. The countries engaged in the war raised loans in these countries, and the loans were utilised for the purchase of war materials.

Therefore the wealth represented by the war debts of the allied and enemy countries may safely be taken to have been transferred to these countries. Their industries, having had no competition from the industries of the European nations, developed to an enormous extent in the four years of war. They have attained a degree of industrial strength against which the war-worn industries of Europe have been unable to stand. In addition to this, the American and Asiatic countries are sheltering themselves under protection. This is an additional burden on European industries.

Political factors too affect the industrial situation of Europe. Irish troubles, Bolshevie incursions, the conflict between the civilians and militarists of Germany, French distrust of English diplomacy, her persistence in extracting reparations from Germany, the American Government's cautious sympathy with Europe, Japan's secret enmity against the growing power of America, the recent secret treaty between Russia and Germany, and the Indian political situation, all these help to postpone Europe's recovery from the present industrial depression.

Having so far examined the factors contributing to the present industrial depression in Europe, we shall now consider the possible remedies for its speedy recovery.

The wholesale destruction of capital by the war must be made good by the vigorous working of productive forces. The present sources of labour, capital and organisation must be engaged and worked until the pre war position is regained. Europe must restrict luxury imports to reduce expenditure and encourage saving.

Credit, which is a very important factor in commerce has now been shaken to its very foundations through the multiplication of currencies and the fluctuations in foreign exchanges. The present political and social disturbances stand much in the way of peaceful trade. One country is unable to believe another; if a German importer, for example, imports goods from England he has first to deposit cash in an English Bank before getting the shipping documents of the goods he has ordered. Such distrust must surely be removed before any recovery in trade can be expected. Recently many experiments have been made in this direction. The English Government has arranged what is called the Export Credit Scheme by which the Government gives guarantees to English exporters. Many International Conferences have been held under the direction of the League of Nations, which have helped in however small a degree, to remove the prevalent international distrust. The Brussels Financial Conference, which was the first of its kind, made many proposals and attempts in this direction. The Washington

Conference removed the distrust between England and France, and America and Japan, and through this Conference America made concessions to the Allies in regard to the payment of their war debts to her. The recent Genoa Conference disclosed the secret treaty between Germany and Russia, and made many suggestions for the economic recovery of Russia. The most important work of the Genoa Conference is the recommendations of the sub-committee appointed by the Conference to suggest a way out of the present dislocation in European exchange. The committee rightly insists on the slow but steady resumption of the gold standard by European countries, and emphatically protests against the multiplication of the currencies. The expenditure, says the committee, must at all costs be limited to the revenue through retrenchment in the present high scale of expenditure.

The present heavy expenditure of the European countries can be greatly curtailed by disarmament of the forces which they have maintained as a result of the national distrust. England is maintaining a large army and is insisting on her dependencies like India continuing to do so. Germany is maintaining an unwieldy force in spite of her present distressful financial condition. Austria is spending 71 trillion kronen in spite of the fact that she has to meet a deficit of nearly 400 trillion kronen, her exchange being at the low value of 94,000 kronen to the pound. France, in spite of her anxiety to adjust her finances, is maintaining a large force. This unnecessary expenditure must disappear at once with the removal of international distrust. Every pie of national expenditure must go to develop productive resources. Heavy retrenchment has to be effected in state expenditure. England has applied the Geddes axe and Germany is forced to avoid all excessive expenditure. India may get the Inchcape axe.

The reparations form a great obstacle in the way of economic recovery, and, as suggested before, much good would result from their postponement.

The influence of the European states on their respective note-issuing banks is the next and most important obstacle in the economic recovery of Europe. The European states have been taking very great advantage of their connections with their note-issuing banks. This is the cause of the present instability in exchanges and the consequent dislocation in the European currencies. The sooner the note-issuing banks of Europe are freed from state intervention the better it will be for Europe.

In conclusion what we require to-day is a world peace. World patriotism must be cultivated and every one must work for the welfare

of humanity at large. The Allies must sympathise with the position of the enemy countries. The United States at the close of the war, fired by the enthusiasm of President Wilson, promised continued help to Europe in its post-war reconstruction. But internal party troubles displaced President Wilson and The United States has since shown a cautious policy towards Europe. She acquired her war wealth, to some extent, at the expense of Europe, and now has considerable strength and credit. She has the means to help Europe out of its present difficulties. She must, therefore, give up her cautious policy towards the continent and help the distressful nations in their economic reconstruction. She must realise the principle of brotherhood and extend a helping hand to war-worn Europe. England must realise that monarchy is giving place to democracy, that a new wave of independence is sweeping over the so-called backward nations of the world, that her Eastern Dependencies can no longer be kept in political bondage. She must realise that an independent India within the Empire can be more helpful to her than a dependent India. India and the other dependencies must in their turn, sympathise with England's present distressful position. Strife must go and peace must be the end and aim of all. Mutual sympathy and co-operation will bring about the welfare of all. Peace, patience and perseverance are the three watchwords for the speedy economic recovery of the world.

M. SHAMA RAO.

## VOCATIONAL TRAINING.

SOME years ago, Sir Norman Lockyer delivered a valuable address at the British Association, the subject being "The influence of brain power on history." The key-note of the address was the dependence of national strength on higher education and scientific research. The so-called higher education in India has not been related to the problem of national efficiency and economic progress, the Indian universities having been modelled on the lines of the British universities at a time when they themselves were being reconstructed in consonance with the changing conditions of national economic progress. Higher education in India has moved in a world of languages, has not explored the realm of reality, has emphasised memory rather than work on things. Ruskin says,—"Let a youth once learn to take a straight shaving off a plank or draw a fine line without faltering or lay a brick level in its mortar and he has learned a multitude of other matters which no lips of man could ever teach him." The truth contained in these remarks is yet to be fully learnt by the people in India.

Subscribing to the painful remark that higher education in India has not been related sufficiently to the future livelihood of Indian youths, let us pass on to examine the remedies for the ills in the present Indian education. Two of them may be singled out for consideration—manual training and vocational training. No educational maxim seems so true or bears repetition so many times as "A child learns by doing." In our schools, boys have little to do. They are not taught even to *think* for themselves, and are unduly helped by their teachers. Very few are the schools in which provision is made for the training of the senses. There must be co-ordination of muscles and nerve centres in boyhood, incapable of adjustment in adult life. It is maintained by leading educationists that the cultivation of manual dexterity reacts favourably on the intellectual faculties and is an important aid in developing them. It should be observed that it is a general manual dexterity that is aimed at, not the special dexterity suitable to a particular trade, and while manual training is a good corrective for the defective present day education, vocational training forms an even more effective one.

Vocational education has been much talked of recently and defined in various terms. While some identify it with manual or, "productive" education, others characterise commercial training as vocational, though not directly productive. Mr. West, Principal of the Training College,

Dacca, defined true vocational education as discovering what a boy could do best, giving him the chance of doing it and putting him where it would be most useful. The schools at present, so far from discovering and fostering such individuality, tend rather to produce sameness, and the system of class-teaching has been based on the assumption of the essential sameness of the needs and abilities of thirty or forty boys.

Any scheme of education, to be successful, must be framed, adjusted and readjusted to the national needs, and must also take into consideration the native gift of the pupils and the pronounced manifestation of the gifts at certain periods of their lives, so that none of them may perish of inanition or lack of timely stimulus. Whether a boy should enter a trade or profession immediately on the completion of his matriculation course is a matter of choice or necessity but his programme should be so arranged by the educator that a broad foundation may be laid, consisting of both general and professional studies, in order that the boy may not be found wanting, when the time comes, in capacity either for continuing his cultural studies or for specialising in any of the numerous technical, professional or commercial subjects. In this connection may be cited the summing up made by Professor D. J. Flemming writing on the Philippine Educational system. "So explicitly threefold is the aim of the Bureau of Education that they sometimes speak of their 'three-phase system.' They set out to help each student, academically, industrially and physically. Having once taken this as their aim, they arrange for specialization to take place amongst teachers and supervisors along these three lines. Academically, the aim is to give the great mass of the population elementary instruction in reading and writing English, in home and world geography and in sufficient arithmetic for simple business transactions and to avoid imposition by exploiters. Industrially, they aim primarily at instilling a respect for labour. In particular, they want to help the Philippine boy to cultivate a home garden and to do simple carpentry for the home, to weave hats, mats, slippers and baskets from local materials, and to handle simple business affairs. Physically, they aim at imparting the rudiments of home and village sanitation, improving the quality and variety of food through developing gardens, abolishing poor and insanitary cooking through classes in domestic science and correcting physical under-development by inaugurating group games and athletics. The dominating idea behind this education is the training of the masses for citizenship rather than the education of a few to govern the masses."\* Though conditions in India and the

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\* We have endeavoured to translate the professor's American into English.—Editor.

Philippine islands differ the aims mentioned above are suited to Indian conditions also.

In imparting vocational education, various difficulties crop up. In the working out of any new scheme practical difficulties will have to be encountered and the framers will have uphill work to do.

How far can vocational subjects be introduced into the present curriculum? This is already over-crowded, and it would be inhuman to tax further the intellectual resources of pupils groaning already under the heavy burden of innumerable subjects. Perhaps a safe way out of the difficulty would be to replace some old subjects by vocational subjects.

To give practical shape to a scheme of the kind providing for vocational training for a specific period, say in the two highest classes of the high school, it appears necessary that drawing and drill as leading to the acquisition of manipulative skill, a necessary pre-requisite for vocational training, should be compulsory in the lower classes. For the two years during which regular instruction in vocational subjects is to be imparted, four periods out of 34 or 35 periods in a week should be devoted to a vocational subject, such as agriculture and gardening, carpentry, smithery, spinning and weaving, tailoring, sewing, music, domestic economy.

The financial aspect of the problem also has to be considered. Besides the financial help, however little, that the government or the management can render to institutions where vocational subjects have been introduced, money might be obtained by treating the vocational subject department as a commercial concern. The capital might consist of shares to be purchased by the students. With the capital thus raised, work such as preparing ink, exercise books, benches, stools, tables could be attempted. The articles thus turned out by the class could be sold at a reasonable profit, either to the authorities of the school or to outsiders. At the end of the year, a balance sheet should be prepared by the boys, a part of the profit being credited to the reserve fund to meet the initial cost of implements etc., and the balance being declared as dividends. This would be merely an extension in principle of the co-operative societies now being run by some schools for the supply of books and stationery to pupils.

Another question that often attains importance is what vocational subjects should be introduced in different localities, whether those suggested by local faculties or those likely to supply local wants. The Director of Public Instruction in Madras recently remarked that teaching carpentry in a place full of carpenters was a superfluity. If he meant

thereby that only such subjects should be taught as were likely to supply local wants, he was not wholly right. For instance, in a place full of water affording facilities for dyeing, dyeing operations might be attempted. To a large extent the introduction of vocational subjects is determined by local facilities. When the Director of Public Instruction called for a report from the headmasters on the choice of vocational subjects, carpentry and weaving found favour with them, while agriculture did not. The omission was rather significant in a country where agriculture forms the mainstay of the people, the reason being the fear of either a large outlay or lack of facilities for agricultural operations or both. It would be a good thing, however, for the government to make facilities in a school in each district for the teaching of agriculture on modern lines.

Certain practical difficulties, however, have arisen in schools where carpentry has been attempted. The present writer is put in mind of a school where carpentry has been taught with little success. This disappointment is due partly to the fact that it is not an examination subject. It may be necessary to elevate the vocational subject to the rank either of an optional or of a compulsory non-examination subject, demanding from the students the production of a certificate signed by the Headmaster to certify that the student has done satisfactory work. And the products turned out should be sold so as to make the students feel interested in the concern.

Let us consider the value of such vocational training. When the times are changing, the old order giving way to the new, it would be sheer folly on the part of a bread-winner to confine himself to one calling in life. The value of a secondary or auxiliary calling, "bye-calling," cannot be overestimated. It augments income and minimises the danger of unemployment. Again the "learned professions" are already over-crowded, and vocational training provides both a good and a ready livelihood. Lastly, but by no means least in importance, from the point of view of national efficiency, it would be better for the people and for the state were the dominating purpose of the educational system to be the training of the masses for citizenship rather than the creation of an intellectual aristocracy to govern the illiterate masses, which end will be subserved by sound vocational training.

A. S. VENKATARAMIAH.



## REVIEWS.

“*The Ethical and Religious Philosophy of Idealism.*” By N. C. Mukerji  
M.A. The North India Christian Tract and Book Society, Allahabad. Paper Rs. 2-8-0. Cloth Rs. 3-8-0.

PROF. MUKERJI of Ewing Christian College, Allahabad, has written a very interesting study of Idealism. The book is divided into two parts; the first is purely ethical, and the second is metaphysical. Prof J. S. Mackenzie, whose visit to Mysore is still fresh in our minds, contributes a very discriminatingly encouraging introduction, and the printed opinions of several other leading luminaries of the philosophical world like Prof. Pringle Pattison and Lord Haldane go to show how the merits of Prof. Mukerji's work have not gone unrecognised even in the West. We cannot but congratulate the learned professor on the success he has achieved, which his wide reading and diligence have so amply deserved.

In his Prefatory Note the author declares that he stands for “a synthesis between Idealism and Intuitionism in ethics and between Idealism and Theism in Religion” and further describe his position as that of “Intuitionist Idealism in Ethics and Christian Theism in Religion.” One can easily understand the Christian enthusiasm of a Christian, which makes the author hope that “Christianity will play an increasing part, not merely as an adjunct of Western civilisation, but as an independent force.” Perhaps the prophecy will come true, but it is pertinent to ask whether this Christianity will be the emotional dogmatic Christianity of the West, or a Christianity philosophised according to the traditions of the East. The question is particularly pertinent as Part II does not literally fulfil the promise of developing Christian Theism. “There is a theistic element in Idealism,” writes the author, “we have never denied, but have built our hope upon.” In another place he definitely recognises the necessity of reinterpreting Christianity on a broader basis, and follows the now well-known idea that the divinity of Christ is not the divinity of the historic Jesus, but of man as such. He quotes with approval that “man also, in his degree, is already more than a person.” The impression left on our mind by the book under review is that it has succeeded in showing not so much that Idealism is indefensible as that Christianity becomes defensible only when it is made to rebel against orthodox theology and is consciously “idealised” in its philosophical, and not its ordinary sense.

## REVIEWS

Prof. Mukerji has on the whole succeeded in producing an able book, but he has done less than justice to himself. There is no doubt that he has got many fine ideas and he could have easily expressed them in his own words. Instead he has allowed himself to be victimised far too much by the habit of criticising one philosopher through a quotation from another philosopher. In fact the book is overloaded with quotations, and it is not always easy to find out what the exact opinions of the author himself are. In Part I he has not thoroughly justified his Intuitionist position, though that Intuitionism be Intuitional Idealism. In Part II in spite of his frequent criticisms of Idealist authors, he remains at bottom more an Idealist than a Christian in the ordinary sense of the term. Altogether the book is one which will not fail to interest all students of philosophy.

A. R. W.

*The Individual and the Community.* By R. E. Roper, M.A., M.Ed.  
George Allen and Unwin, Ltd., London. 8/6 net.

MR. ROPER'S book opens with a very inviting preface. As is usual with the political books of to-day it breathes a note of thorough dissatisfaction with things as they are. It rails at "the authority of the most expert professor" as well as at "the patent medicines of the politician," and it holds out a hope of putting political life on a new and sound basis. But it can hardly be said that the book is any adequate fulfilment of the promise in the preface. There is a good deal of biology in the book, which is interesting enough reading, and there is a certain freshness of thought, but the basic idea of Mr. Roper is dogmatically stated, and difficulties are brushed aside with a dogmatism more worthy of "professors" and "politicians" than of Mr. Roper! But we shall let him speak for himself. We can all sympathise with him when he says: "we need a community where none go hungry and none are slaves." He diagnoses the political disease to lie in the very idea of compulsion, which he regards as the very death of a community. "Community is an organism, State is an organisation." He defines community as "the association of two or more human beings for common (though not of necessity identical or similar) purpose or advantage in their evolution." He is horrified at the idea that "the rules of a school should be held to bind a child unless and until the child understands and accepts them; it is monstrous that the regulations of an industrial school or a prison should be held binding upon those sent there by force." He naively assumes that "the soul of man

knows well enough what he shall render to Cæsar and what to God." It might have been well, if Mr. Roper had paused a bit to think out the consequences of his naive assumptions. Compulsion is bad indeed, but can we really do without it? He emphasises the principle of voluntary association in a community, and goes to the length of saying that as soon as a person is unwilling to be a member of a community, the community really ceases to exist! How if a person recklessly defies the rights of others and then declares his unwillingness to be a member of his community? What can the community do in self-defence? If Mr. Roper is right, it dare not apply force to him, it would be "monstrous" to subject him to prison discipline! Mr. Roper's polity is an ideal one for thieves, assassins and law-breakers generally, but for honest law-abiding citizens, well—! Mr Roper's enthusiasm sometimes hurries him into expressions bordering on the comic. Have the numerous political conferences of our day failed? Here is the remedy proposed by Mr. Roper: "In your imagination dower the conference with the common sense of a mother, the sympathy of a father, the tact of an old nurse, the self-reliance of a boy or girl: imagine them inspired with a will to creative work, convinced of the principle of voluntary association, and possessed of an internal harmony, vibrating in response to the eternal life-force." If this is all that is required of a conference, we can easily understand why Mr. Roper fails to understand why conferences have failed!

A. R. W.

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*Our Infinite Life.* By William Kingsland. George Allen and Unwin, Ltd., London. 6/6 net.

THIS book is one of the most readable we have come across. It is somewhat suspicious of metaphysics and dogmatic religion alike. It frankly confesses to have a predilection for mysticism, and many of its statements are mystical. But it would be utterly unfair to say that Mr. Kingsland's book suffers from the usual dogmatism of books on mysticism. His mysticism is refreshingly rational and marked with a sweet reasonableness. Thirteen years ago in 1909 Mr. Kingsland published his *scientific Idealism*, now out of print. The book under review professes to be a résumé of the argument of that work. The author has another work, *Rational Mysticism*, ready for publication, and we have no doubt it is something to be keenly awaited.

For readers in the West, assuming that their tastes are not bounded by the physical, the book under review will possess a remarkable freshness. It is completely out of line with the traditions of European metaphysics or Christian mysticism. On every page it bears the stamp of Upanishadic influence. Mr. Kingsland does not seek to expound as a historian or critic the mysticism of the East. He has done something much better. He has assimilated its spirit and produced a book which also bears the stamp of his own thought. What distinguishes Mr. Kingsland's mysticism from the often dreamy mysticism of the East is his remarkably strong hold on science. He does not despise science. He regards it as a necessary and inevitable stage in human knowledge, and argues that science inevitably points to a super-physical beyond. His book opens and ends with the famous Vedantic "*That art thou?*" and like an Advaitin argues against individualism as the root of all evil. He believes with the Indian mystic that "one of the powers we may develop when we have realised the nature of the real *self* is the power of inner vision which overpasses the limitations of the physical eye." He believes in Karma and in reincarnation and tentatively propounds the view of "the disintegration or dissociation of the personal complexes after physical death" into so many distinct individualities on different planes of life.

There are of course gaps in the argument, *e.g.* when he falls back on the saying of St. Paul: "O man, who art thou that repliest against God?" or of Krishna: "What, O Arjuna, hast thou to do with so much knowledge as this?" But it would be ungracious to dwell on little faults in a book, which as a whole is so charmingly and vigorously written and bears such eloquent tribute to the vitality of the Upanishadic seers even in the case of a European.

A. R. W.

"*Hymns from the Rig-veda.*" By A. A. MacDonell, M.A., PH.D., Hon. LL.D.  
The Heritage of India Series. Association Press, Calcutta. Cloth  
Re. 1-8. Paper Re. 1.

THE 'Heritage of India' series, which is now well-known, already includes several useful volumes and the present one is not the least important of them for it treats of the Rig-veda which is the very foundation of all Indian thought. Europe, it is stated, traces back whatever is excellent in her culture to Greek thought; similarly we may say that India has all along looked upon the Veda as containing

the germs of all that is great in her religion and philosophy. An additional interest has now been discovered in this ancient book by the researches of the oriental scholar which have shown that it is the earliest document of not merely the Hindus but also of the whole Indo-European race. Though the significance of the Veda is so great, its study has been neglected in India for some generations. Even the orthodox *pandit* who regards it as 'revealed' hardly gets beyond learning it by rote or understanding it only in parts. The fact is that Vedic study has for long been superseded by the study of the *sastras* or more properly *darsanas*; and special efforts have become necessary at the present time to revive it. The Indian Universities are doing something towards this revival by including the Veda in their curricula; but so far, nothing considerable seems to have been done to familiarise the general reader, through English or through the Vernaculars, with the nature and value of Vedic literature. The present work is intended to supply this deficiency so far as the English-knowing reader is concerned; and it appears to us to be eminently well suited for that purpose. It gives in a metrical form the rendering of forty hymns of the Rig-veda; and the selection is representative enough to give a clear and correct idea of its contents. In the case of each hymn, the translation is preceded by a short note describing the conception of the deity therein extolled and also including other information required for a proper appreciation of the translated specimen. It is hardly necessary to say that the whole work is done exceedingly well, for the book bears the name of a renowned Professor to whom the world of Sanskrit scholarship owes many excellent publications on the Veda and kindred subjects. There is also an Introductory Chapter which gives in a compact form all the general information, required by the reader about language, metre, and thought for understanding the spirit of the Veda and Vedic times. The only point that calls for mention here is that Professor MacDonell still adheres to the view which he put forward a quarter of a century ago in his 'History of Sanskrit Literature' regarding the commencement of the Vedic age—1,300 B.C. This date was first proposed by Max Muller in 1859 as *entirely provisional*; but, as pointed out by Dr. Winternitz in his work on Indian Literature which is in course of publication, scholars have assumed it to be a *proved fact*. "This purely hypothetical and in itself entirely arbitrary chronological fixing of the Vedic epochs by Max Muller attained in course of years the respect and character of a scientifically proved fact, though no new arguments or substantial proofs were added thereto." Earlier dates also have been suggested by Professor Jacobi and others which have

astronomical data to support them and they deserve better recognition than they have hitherto received. The book though primarily written for the general reader will be found of great use by the University student.

M. H.

*The Story of Mankind.* By Hendrick Van Loon. Harrap. Rs. 10-15 0  
P.T.I. Book Depot, Bangalore.

"WHY should we ever read fairy stories, when the truth of history is so much more interesting and entertaining?" asks Mr. Van Loon, and indeed if all histories were as entertaining as is "*The Story of Mankind*," the fairy stories would have a hard fight for it.

Allowing, however, that the fairy story has certain innate advantages over history, yet history makes a very wonderful tale, and Mr. Van Loon is evidently himself impressed by its marvels for in this book for modern children they stand out clear and strong;—wonders of human development and discovery, prodigies of human effort and achievement, brought about and accomplished by creatures that this truthful story shows to have been remarkably weak and petty and dishonest and ignorant, and yet of the most surprising energy.

The need for a general history giving in broadest outline the story of the human race has always been felt and many attempts have been made to satisfy it, but it is doubtful whether any work of the kind has so nearly accomplished what it set out to do.

Perhaps one might suggest some of the reasons for the satisfactoriness of this book.

First and foremost Mr. Van Loon's book is written for children, and children are the right persons to see life whole; they will accept the broad brief sketch where a grown-up will demand detail, in the multiplicity of which clearness is lost. Secondly and finally the fact that it is written for children has given the book almost all its other virtues: its simplicity, its vividness, its picturesqueness, its kindliness, its humour and the impression it leaves of the vast fields of knowledge yet to be explored.

The book is divided into chapters, each dealing with a movement or an epoch, or with the growth of some one nation; but there is a continuity and an onward march of events throughout, and a constant linking up of periods with other times, including our own, which is a very illuminating process.

Great names are individualised in a paragraph, so clearly and

definitely that the historical horizon is quickly filled with characters not soon to be forgotten, and anyhow to be happily recognised in their more complete settings. In treating of great men the author has not hesitated to show—with the kindest of ironic touches—the smallness that frequently lay behind. Perhaps it is because these heroes move on the general human level of tempered vice and virtue that they are, in this book, so understandable and so memorable.

The author's gift of irony, which is may be encouraged by an American education grafted on Dutch traditions and a musical inheritance, is one of the most attractive things in the book. It implies the soundest common-sense and in no way is allowed to detract from the enthusiasms that the real study of history must arouse. His simplicity of treatment makes clear and interesting the driest and dullest historical complications, often, of course, by that stroke of genius which cuts things out. The memories of youthful struggles with those formless monsters, the Renaissance, the Holy Roman Empire, the Congress of Vienna and other such, of sounding title and (to the childish mind) of little import, make one wonder why, in the all-wise dispensations of Providence, the Mr. Van Loons should be so rare.

One of his rarities is the skill with which he uses a pencil to produce not works of art but pictures that in themselves are worth many pages of explanation. The pictorial maps, the large impressionist coloured plates, the smaller pen sketches full of symbolism—even the worst among them sufficient to crystallize a thought—should rouse enquiring interest and the creative instinct in the most apathetic child. Another rarity—perhaps the rarest of all—is the spirit of tolerance that pervades the book; and yet it is no more than one would expect of a man of Mr. Van Loon's liberal education and sojournings among many peoples. It is, apparently, a quality he much values himself, for it is akin to that Irony and Pity which he, like the great Frenchman, has taken for his guides.

At the end of the book is a very full bibliography, that looks enticing enough though it is said to have less attractions than the one in the American edition which appeared in 1921. This same American edition must be held responsible for the occasional eccentricities of spelling in the present issue, which might well have been avoided.

G. M. R.

*Theosophy and Christian Thought.* By W. S. Urquhart, M.A., D. Litt.  
James Clarke and Co. 6s. net.

Dr. W. S. Urquhart has made an earnest study of Indian Thought. He is the author of 'The Upanishads and Life.' His book, 'Theosophy and Christian Thought' is a very fair estimate of Theosophy.

He presents in clear non-technical language the main teachings of Theosophy. His examination of the doctrines of Transmigration and of Karma and the questions he raises are very stimulating. For instance, he asks the place for 'Grace of God' in the doctrine of Karma, and points out how shoving back the inequalities of this world to a prior world is not a solution so long as the inequalities of the previous world require explanation.

Two chapters are devoted to the discussion of the relation of Theosophy to science, philosophy and religion. The result of a logical examination is that Theosophy fails as a science as a system of philosophy, and as a religion. He shows how its antecedents, the claims of those 'who know' and claim occult powers, and its readiness to build with material supplied by 'imagination run riot' have been the cause of the degeneracy of Theosophy into dogmatism and sensationalism with a strong undercurrent of the practice and superstition of magic.

He plainly cautions the Christian who revolts against what he considers the narrowness and dogmatism of his religion, showing what Theosophy to-day has really to offer in its stead. The book suggests that a deeper study of Christianity itself will be more satisfying.

This book will be read with profit by all who have an inclination to Theosophy and also by the dogmatic sectarian type of Christian, for whom a little liberalising culture is essential. Nor ought it to be unwelcome in Theosophical circles. It shows the weak spots, and perhaps on that very account it ought to be read by Theosophists.

The book is well got up and contains a bibliography and index.

A. S. G.

*The Economics of Everyday Life, Part II.* By Sir T. H. Penson, K.B.E.,  
M.A. Cambridge University Press. 4s. net.

In modern times a good deal of academic and practical interest in the subject of economics is being evolved, and the study of the subject is undertaken on an entirely different method from that of olden times. The principles are being studied, and taught too, by a scientific method, i.e. the method of study adopted in physics, chemistry, biology, etc.,



that of analysis, synthesis, experimentation and generalisation. Sir T. H. Penson's "Economics of Everyday Life" is a useful aid to such a study and goes far to meet the primary needs of teachers and pupils. The main purpose of the book, claims the author in the preface, is to lay the foundation of economic study by explaining clearly the main features of the subject. "Great social and economic problems are needing solution and those who are called upon to assist in that solution by supporting or opposing any particular measure or line of action should have a sufficient understanding of the economic cause and effect to be able to act with judgment and conviction. The foundation of such economic study may well be laid during the period of school life, but for this a text-book is necessary in which the essential features of the subject are simply described and clearly explained."

Judged as text-book, the volumes fill up a long-felt gap and are a great success. Without any hesitation, they can be prescribed as a text-book, at least for the intermediate courses in Economics. Without a long and historical introduction, such as is found in most books on economics, the author plunges directly into the subject matter, aiming mainly at securing for the student a mastery of the body of economic principles—such mastery as a student of physics or chemistry is expected to acquire so as to enable him to go deeper into the subject in his higher courses of study. The well-designed table of contents and the clear and simple statement of principles, brought home to the readers by bold type and graphic illustrations, are among the main features of the book, for which the author deserves hearty congratulations.

The method of exposition of the subject-matter of Economics is clear and unique. Without putting any strain on the readers by asking them to go out of the world for "an economic man," the author goes directly to the economics of every day life and sums up the method thus "As the title suggests, the object was to explain the economic life that is going on all around us and to describe the various parts of the individual organisation as it at present exists. An attempt has been made to show that economic activity springs from man's wants and that it is through that activity that wants are satisfied. Part I is concerned as a whole with the various forms of effort and with the way in which individual effort results in individual income; Part II with the application of that income to the satisfaction of individual wants."

The contents of Part II, may be briefly indicated, culling, here and there, certain extracts from the book, to illustrate the author's method of exposition. It contains 3 books, V, VI and VII, Book V dealing with different aspects of consumption, Book VI with the economic life

of the state and Book VII with associations and co-operation. In discussing the different aspects of consumption, the relation between effort and satisfaction is first analysed and graphically illustrated. Consumption is considered by the author as both the beginning and the end of all economic activity. "It is its beginning, because the desire to consume is the motive of all economic activity . . . it is the end because when the effort has been made, when wealth has been produced, that wealth has no other function or purpose than to be applied directly or indirectly to the satisfaction of human wants." Noting thus, in the first chapter, the main motive of economic activity, the author passes on in the second chapter to the classification of wants, and notes the limitations of the ordinary classification into necessities, comforts and luxuries, and also the difficulties of defining such expressions. For example, "What are necessities," says the author, "depends upon the standard of living." But what is the standard of living? This is to be very carefully considered. "By standard of living," explains the author, "we commonly mean that the satisfaction of wants has gone on long enough to become a habit, that certain things have come to be regarded as the normal requirements of everyday life. . . The standard varies from class to class, from individual to individual, from time to time with the same individual or class. It is a question of habit, of circumstance, of education, of tastes, of ambitions." In the next chapter the author passes on to the discussion of the important problem, "Can wants be measured?" Considering the difficulty in measuring a person's feelings, desires and motives, the author explains that motives can be measured only indirectly by accepting the measure of what results from a particular motive and the principle is reduced to a mathematical formula thus: "Utility (power to satisfy wants) is measured by the effort that would be made or the price that could be paid." With this fundamental idea in the measurement of wants the various allied problems such as the marginal utility, the consumers' surplus and the family budget are explained in a simple way with apt illustrations. The last three chapters cover the discussion of various aspects of spending and saving.

The economic life of the state and association and co-operation are next considered, in Books VI and VII covering about 40 pages. Critically speaking in such a short space no justice can be expected for these subjects. Apart from the aspect of brevity, the author seems to have shown some partiality for these subjects, and many other topics equally important to a student of economics might have been allotted a chapter, such as national debt, transportation and business organisation. If

the author had limited himself to the satisfaction of wants in Part II it would have been a fitting supplement to Part I.

The Great War has had far-reaching effects in all directions and the effect in economic life has been profound and world-wide. Many economic views have undergone changes revolutionary in character, and many more are awaiting solution at the hands of scientists and thinkers. At such a time the opinions expressed by persons like Sir T.H. Penson, who, as an administrator of an important Department, possesses great experience of practical affairs, are of importance for the solution of the present day problems. The conclusions of the book are significant. "The most important features of present day economic life have been shown to be,

1. The interchange of services,
2. Economic inter-dependence not only of the members of the same community but of people all over the world.

H. V. S.

*Arpana*. By M. Sriramamurty, Maharaja's College, Vizianagram. S. V. V. Press, Vizianagram.

WE began the perusal of this little book without the slightest interest or hopefulness, but were at once arrested by its beauty. Every one is at present imitating Rabindranath Tagore, or rather imitating the English translations of his work. The results are, as a rule, of the most melancholy kind, for it is fatally easy to write stuff that looks like those translations and is replete with their mannerisms. No tricks of phrase are easier to imitate, or demand less thought and feeling in the imitating: and any cultured person can "phrase us so eight years together"—mechanically, without the slightest effort, and with the growing delusion that he is no mean poet. It is forgotten that the Rabindranath translations (even when by the poet himself, as in many cases they are not) are mere translations, that they are not poetry but reflections of poetry, the original creation having been in Bengali verse. Further, though Rabindranath Tagore is noted for repetition and mannerism, these things are not precisely the essence of his genius. Under the inspiration, however, of the revived myth of "prose poetry," reams of paper are being covered with sentimental and affected prose paragraphs corresponding to no idea or passion whatever, and other reams with other prose paragraphs corresponding to the sincerest feeling but with no distinction at all. One of these kinds

of thing we expected to find once more in this book, but we did not find it.

The aim is modest, and the writer really does not think much of himself. He thus prefaces his work: "This slight collection of prayers and meditations is sent out into the world in the hope that some kindred soul may be reminded of Him whose worship ought to be the constant activity of every man. The pieces may not have any literary merit." The tone of the pieces shows that this is not an "attitude," and that the writer is not making efforts after distinction. But his work is distinguished. Its piety and spirituality reveal an exceptional nature, but would not, of course, suffice for literature. It might indeed be argued that piety as a motive reduces the chances of literary distinction—a curious fact in western literature of certain kinds, these kinds, perhaps, including the lyric, which most nearly corresponds to these pieces. It is not, however, a fact as regards Indian literature, in which piety is an ever-present and essential element. There is a distinction here that might take much expounding, and the process, while it would reveal the falsity of the "spiritual east, unspiritual west" tradition would do much to explain the origin of that tradition.—These pieces, then, are spiritual with the pious kind of spirituality. But they have, in addition, noble qualities as literature. The "rhythmic prose" form is, of course; to be regretted. It means that the compositions, however poetic, and though the writer is a poet, are not poetry. What is he to do? It is the old problem of the south Indian poet seeking a medium. It is to be hoped that he writes poetry in his vernacular. Perhaps also he will be able to achieve English poetry: the heightening of verse is all that is now lacking to his work. It is, in its best portions, perfect in phrasing, and its rhythms are exquisite and one with its inspiration. We may seem to be speaking in exaggeration, but we cannot but wonder at such an achievement in a foreign tongue, and would accept this work as fine work even were it from an English pen. The figures, again, are of admirable fitness and beauty, and they are not borrowed, as is the custom, from Rabindranath Tagore: they come of the writer's own impassioned unification of things. We do not say all this of the whole book. There are platitudes and conventional passages. But in Indian literature conventional expressions are a large part of the method, and are far from meaning lifelessness; while many a profoundly true word is spoken in platitude, and though this scarcely commends platitude as literature it means that occasional platitude is far from stultifying a man's work. The wonder is, however, that here convention and platitude are so little seen. The mind is intense and original, and the work is truly creative.

"Can all men dwell on the banks of Ganges?"

"Art thou unapproachable except we besmear our bodies with ashes?"

"Are Holy Mantras all the language thou canst understand?"

Will the reader deem this commonplace because the ideas are old? We cannot think thus of it, finding in these lines new and most striking speech, and a delightful bitter-sweetness in the scorn. Rabindranath often speaks of the preparation of the soul's house for the divine and long-awaited guest, but is there not something *new* in this?—

"Tell me, must I use a screen at the gate? But then, what if thou pass by my room and I see thee not?"

Here is a passage that employs certain conventional terms and ideas, but it ends in a glory that one cannot put by.—

"The lonely bird sings as it soars in the trackless sky. The little fish dances as it swims in limitless depths of the ocean. Roses smile in gladness under the open vault of the skies. Why should I alone remain in my gloomy dwelling that allows not sunlight and the roaming wind?"

"Eternity is my life and not these fifty years. The universe is my habitation and not this little tenement—no; not even this puny earth."

The following is a typically perfect analogy, finely conceived and phrased:

"The rough winds ride over tree-tops playing gleefully with their tender foliage. The sun enters the sparkling dewdrop and the moon hides herself behind the fragment of a cloud.

"Thus does greatness always have its relation with little things. And thus also, O Infinite One, Thou art enthroned in the narrow space of my heart."

As one reads through the book one is struck with the unvarying finish of the style, its subtle variation of phrase, and its adaptability to varying tones of feeling. It would take too long to illustrate what we consider the many merits of these compositions. We believe them to be of exceptional value, and we wish that the writer would essay verse, and also that he would attempt work beyond this sphere of pious meditation—more concrete work, showing human nature in more active and more varied mood. These pieces are evidence of his gifts. They pass the great all-comprehensive test: they move one, while the imitations which in the look of the page they resemble leave one cold.

J. C. R.

*Readings from the Bible, Chosen from the Authorized Version for Use in Schools*, by B. L. K. Henderson, M.A., D. Litt and F. G. Russell, B.A. Mus. Bac.—

"RELIGIOUS instruction" in schools is a problem in England as in India, though of course it is not there a question of different religions but of different forms of Christianity—of different interpretations of the Bible and views as to its authority. The problem has frequently been solved by omitting Bible reading altogether. To ignore religion is a rather sorry way of securing peace, and the omission of Bible-reading in English schools means loss in other ways also. The English Bible is unique in literary value, partly because of the greatness of its originals and partly because of the quality of its English. Its language is in itself an education, and it has often been noticed that people otherwise uneducated but given to poring over its pages and lovingly learning its verses, by heart—such as the Scottish peasant of bygone days—have acquired something of the refinement of the scholar, something of the scholar's fitness of speech, apart from the uplifting and invigorating power of the sacred writings in their religious, ethical and poetic aspects. The excellence of the Bible as literature is illustrated by its extraordinary influence upon the style, as well as the thought, of great English writers since the publication of the Authorized Version in 1611. Carlyle, Ruskin, Stevenson, so widely differing both in idea and in language, were all "brought up" on the Bible, and all owe to it an immeasurable literary debt. The editors of this book quote from a passage, in his life of Cromwell, in which Frederic Harrison dwells upon both the purely literary and the deeper influence of the Bible upon subsequent times. "The issue of the Authorized Version affected our people as hardly any work affected a nation. Its mighty imagery, its majestic utterances as to man's soul and God's power, its scheme of sin and death, of future life and judgment, of man's vileness and the nothingness of this transitory life, wrought at the core of the finest and deepest natures of the age. Milton, Lady Hutchinson, have given us a sense of its beauty and harmony. Fox and Bunyan give us a sense of its mysticism and its passion . . . . There was a generation in which this phraseology was the natural speech of man."—The educational authorities in England are now seeking to encourage in schools the simple reading of the scriptures, without doctrinal purpose or comment; and this is strongly recommended in the report on "The Teaching of English in England" formulated by a departmental committee appointed by the president of the Board of Education.

This book of selections has been issued to facilitate such reading.

The editors justify the selection idea by three very sensible arguments—the existence in the Bible of certain passages not calculated to edify the pupil, the sheer bulk of the Bible, and the attitude of those who hate the very look of a Bible but are capable of responding to the literary magnificence of particular passages. They do not mention what is perhaps the best reason of all—the desirability that the attention of children should early be focussed upon the noblest passages in the Bible. A good selection has been made. Poetic passages are not printed in ordinary prose-paragraphs, as in the Bible itself, but are divided into lines in correspondence with sense and rhythm, and the result certainly is to bring out the poetic quality of such passages—as well as antithesis and parallelism.

Many will quarrel with the idea of the book. Some will consider it sacrilege, a mutilation of that which is divinely perfect and is injured, and misconstrued, if its proportions be in any way disturbed. This is a religious objection, and others, more numerous, will probably make the literary objection to which all anthologies not confining themselves to short poems are open, that context affects the meaning of a passage and sometimes enhances its beauty, that much is lost in the transplanting of the "flowers." We think that in this case there is little force in either objection. A large number of the passages chosen are in their very nature separable—separate poems, for example, or self-complete narratives; and if some be robbed of some of their import, this is much better than that the pupil should remain a stranger to them. An entirely comprehensive study of the Bible is impossible in an ordinary school.—One want, however, is likely to be felt. Some of the passages need a good deal of explanation—whether of themselves or of their context. All that the editors do is to provide a good, but very brief, general introduction on "the story of the Bible," giving a mere outline of the history of texts and translations. Everything else is left to the teacher, and here will emerge once more the old danger of the assertion of sectarian views. It would, we think, be better to have this business done editorially, and then those who prescribe text-books could choose or reject the book knowing what they are in for. The work, however, could be done in such a way as to commend itself to almost all protestants. (Roman Catholics, of course, would not in any circumstances use the book, because their church does not recognise the Authorized Version.) Such a course might make for wider usefulness. Yet the book as it is will, no doubt, be very widely used, and apart from its main purpose grown-up people will like to keep it by them. Its richness means a kind of rediscovery and there is a certain novel, very profitable, delight in finding Bible passages printed like ordinary literature,

in non-ecclesiastical format, and thinking of them for the moment, from the purely literary point of view.

The book might well be widely used in India. The non-Christian is of course less expert than the Christian in finding the best passages in the Bible, and he is frequently anxious to find them. Besides being an anthology, the book may serve to him as a sort of "gist" of the Bible. Nor are even the more conservative among Indians likely to object to it.

J. C. R.

*A Guide to General English.* By W. S. Rowlands B.A. (Oxon.), I.E.S., and N. R. Navlekar, M.A. Oxford University Press.

WE are far from recommending this book. It contains sixty prose passages intended for treatment in the various ways known to the student of English composition—explain italicised portions, summarise the meaning, reproduce briefly in your own words, and so on. The first thirty passages are dealt with by the editors, practice being better than precept, and the others are for the student's exercise. The drawback is the fallibility of the editors themselves in the use of English. The following examples occur on a single page at the beginning of the book.

First of all, they speak of the *expansion of a transition*! An Indian student might be excused for this mistake, but his instructors—particularly those commended to his attention by the Oxford University Press—ought to recognise the restrictions laid by derivation on the figurative use of words.

Next,—“With the opening up of new sources of knowledge the course of human progress ran through different channels.” One of the chief difficulties of the teacher of English is to induce his pupils to use clear and consistent figures, if any at all,—and here is an example for them! We have tried in vain to understand this figurative utterance. We keep wondering whether “human progress” is one stream or several, and if the former how many channels it possesses. Whether one stream or many it—they—must have existed before the water began to flow from the new fountains: in what sense then can that new water drive it—them—into new channels? surely this is not the effect of the influx of tributaries. We may be dense, but figurative speech—especially that intended for the edification of a foreign student—should never set one wondering like this!

“The apparent blue vault which surrounds the earth.” Nothing in style could be more vicious. A vault cannot surround its base. The



phrase "apparent blue vault" brings to the mind the sky in its vault-like appearance, and that appearance does not belong to the whole sky, a sphere encircling the earth, but to the visible half of the sphere. The collocation "vault which surrounds" affects with acute discomfort anyone who cares about words, and "apparent" does not save the situation.

"It was brought home to people that the planet rotated and revolved round the sun and in the air, i.e. without any material support which, according to old traditions, existed underneath it."

(1) Unless chiasmus is used (and it would be very unhappy here) it seems to be indicated that the earth *rotates* round the sun and *revolves* "in the air" (which apparently means round its own axis). Again it seems to be forgotten that the earth neither revolves nor rotates "in the air," for the air both revolves and rotates with it. Can it be that "in the air" means "with its covering of air"?—The interpretation of this sentence will be an admirable exercise for the student.

(2) What is the use of our preaching to students, day in and day out, that they are not to use abbreviations in composition, if "i.e." is to be used in their model?

(3) The words from "without" to the end are the result of confusion between two constructions—(a) without *the* material support *which*, etc., and (b) without *any* material support *such as*, according, etc.

We are occupying too much space with a review of a small book, but we find this particular page an interesting one, and hope our readers will do so also. The page ends with an answer to the demand,—“Exemplify with reference to India the process described here” (in the passage quoted in the book). Here is the answer, intended to serve as a model of composition

“Like Europe in the sixteenth century, India is passing today through a period of reformation and renaissance. The glamour of western philosophy and science has begotten in the Indian mind an excessive scepticism, and a distrust of everything established. The belief in an old mythology is being shattered; tradition, authority, and custom are no longer accepted as adequate sanctions for moral rules and political institutions. The Earth no longer rests on the hood of the Divine Cobra, nor does it quake at the shaking of His head. The demons Rahu and Ketu have left off swallowing the sun and the moon. Caste-distinctions are fast disappearing; the Brahmanas have lost their hold upon the other classes of the Hindu community, and their word is openly set at naught in matters religious and social. In a word, a spirit of rational enquiry and criticism is supervening upon an

age of childlike faith, and the old order is changing, 'yielding place to new!'"

We are not concerned with the truth or error of the various statements made here, but with the astonishing *incoherence* of the whole paragraph. First we have a reference to "reformation and renaissance," both good things. Immediately, however, we find that their effects are *bad*: this is indicated by "glamour," "excessive scepticism," and "a distrust of everything established." Thereafter we are abruptly re-translated to the idea of good, which remains in vogue to the end; and the summary (comprehensiveness is claimed for which by "in a word") altogether ignores the shadows of the second sentence. To point out that some aspects or results of a movement are good and others bad is one thing, but to produce a hotchpotch like this is another,—and will not help one in one's task of clarifying students' minds and persuading them to arrange their matter.

It seems unnecessary to go further. One regrets the acerbity of this criticism, but one has some regard for the language, the profession, and last but not least for the student; nor does an Oxford man enjoy seeing the imprint of the Oxford University Press upon a production like this.

J. C. R.

*Progressive Exercises in English Composition* By C. E. L. Hammond.  
With an introduction by J. C. Smith. Oxford University Press.  
3s. 6d. net

THIS is a small but extremely valuable book, based upon long experience in the class-room and designed to promote facility, accuracy and scope in the use of the English language. Probably the large majority even of English people are much more limited in vocabulary than they need be, and confess an occasional shakiness as to the distinctions between terms. A properly directed school training, or, when it is too late for that, a little serious study, would make a great deal of difference, enabling people to express themselves much more precisely and fully. Journalism, especially newspaper journalism, perpetually corrupts the language, and at the same time schools tend to slackness as to grammar; and it is really astonishing how ignorant of his own language—not to speak of its literature—an Englishman may be. Those who have been trained by Mr. Hammond are to be envied, and he has done well and kindly to make his method available to others.

Pupils using this book, under the guidance of a competent teacher, will attain an exceptional equipment. They will have words, and know how to use them, and they will neither dread figures nor mix and misapply them. They will be at home in sentence and paragraph, in essay, description and argument, and they will even attain unto punctuation. It seems to us to be exactly the right sort of book to prescribe for schools, with two provisos—(1) that it be supplemented by a good grammar-book, (2) that the teacher concerned be absolutely reliable. The book consists entirely of exercises: It indicates a method and provides matter to work on. The teacher must know the answers. This may be the difficulty in India, where not all schools are as well staffed as they should be. At any rate the good teacher will find the book the best possible stand-by. We believe, also, that it would be very useful, as a prescribed book, in colleges. There it would be rightly used, and it would be of great benefit to students. They need precisely what it gives. Mr. J. C. Smith's Introduction deals briefly with certain aspects of training in the use of the language and in interpretation, and is most suggestive.

J. C. R.

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## UNIVERSITY NOTES.

### THE UNIVERSITY UNION, MYSORE.

THE Union began its third years activities on the 1st of July 1922 when Prof. A. R. Wadia the newly nominated President took charge of his office. At a meeting of the Managing Committee held on the 7th July 1922 arrangements for the year's elections to the various offices in the Union were made.

*Representatives on the Committee.*—The various classes of membership in the Union, returned their representatives to the Committee as follows :—

1st Class,	.....
2nd Class	A V. Krishna Moorthy, Esq, B.A., B.Com.
3rd Class.	M Venkatakrishnaiah, Esq.
4th Class	K Krishna Rao, Esq, B A, L.T
* 5th Class.	(Students from the various Classes of the College)

The General Body at the meeting held on the 17th July elected Mr. S. V. Krishnaswamy Iyengar as the Vice-President, and Mr. M. G. Lakshminarasu as the student Secretary and Prof. B. M. Srikantia and Mr. K. Ramiah as the representatives of the General Body in the Committee.

The University has nominated Dr. Usman and Mr. M. S. Krishna Rao, and Rao Bahadur M C. Ranga Iyengar as members of the Managing Committee.

Prof. N. S. Subba Rao continues as the Treasurer and Ex-Officio member of the Committee.

*Sub-Committees.*—On the 21st July 1922 the Managing Committee appointed Mr. A V Krishna Moorthy as the Joint Honorary Secretary and appointed following Sub-Committees —

1. The Finance Sub-Committee
2. Debate Sub-Committee.
3. Magazines and News Papers Sub Committee
4. Games Sub-Committee.
5. Restaurant Sub-Committee.

\* 1st Year B.A. R. Muttoti Rao Soudia, Esq.

2nd Year B.A. N. Rangachar, Esq.

3rd Year B.A. S. Narahari Rao, Esq.

Syed Zia Mohamed Buckari, Esq.

B.Com. Classes P. Sampangiramaiah, Esq.

M.A. Classes M. A. Venkata Rao, Esq., B.A.

*Debates, Meetings and Lectures.*

The following is a list of debates up to the writing of this report.

Date	Motion debated	Speakers For	Speakers Against	Chairman	Result: Motion lost or carried by
19-8-22	"That Liberty is a higher ideal than Equality."	Messrs. M. A. Venkata Rao, B.A. M. Raja Rao. T. Suryanarayana Rao. M. H. Gopala Iyengar. N. S. Hiriyanniah. T. V. Narasinga Rao. Margasahayam.	Messrs. G. Hanumantha Rao, B.A. K. Ramiah. A. N. Moorthy Rao, B.A. Syed Zia Mahomed N. Seshadri, B.A. Mahadeviaiah. H. V. Suryanarayana Chetty Nagabhushanan. K. Rama Iyer.	Prof. A. R. Wadia.	Lost
2-9-22	That Loyalty to books is the greatest hindrance to Progress. (This was a Freshmen's debate).	B. Rachappa. H. K. Raja Rao. S. Nagarajiah. A. R. Reddy. A. N. Moorthy Rao. N. Madhava Rao.	A. Narayana Rao. N. S. Hiriyannayya. M. L. Srikantiah R. Muttoji Rao, Scindia, M. H. Gopala Iyengar. Narasinga Rao.	Prof. B. M. Srikantia	Lost

When it was about 8 o'clock, the meeting was adjourned, as there were many more to speak.

5-9-22	"That Loyalty to books is the greatest hindrance to Progress."	<p>Messrs.</p> <p>Chikkanna. T. Rama Rao. Venkatanarasimha Sastry. Subba Rao. B. V. Seshagiri Rao. M. G. Lakshminarasu. K. Ramiah. M. Raja Rao.</p>	<p>Messrs.</p> <p>S. Narahari Rao C. Gurumoorthy Sastry. Y. Nagabhushanan. Subrahmaniam. K. N. Srikantiah. Venkataranga Iyengar G. Muniswamy Iyer.</p>	Prof. B. M. Srikantia.
16-9-22	"That Science has not added an iota of happiness to the life of man."	<p>C Mahadeviah. M. L. Srikantiah. Nagesachar. M. Raja Rao. Syed Zia Mohamed. Margasahayam.</p>	<p>N. Madhava Rao. M. H. Gopal Iyengar. Mir Ikbal Hussain. Nagabhushanan. B. V. Seshagiri Rao. Nagarajah. M. A. Venkata Rao.</p>	S. V. Krishna Swamy Iyengar, Esq.
There was no final division on the question, as the meeting was adjourned to a later date, but no date could be found.				
14-10-22	"That Philosophy is essentially a vain thing."	<p>Messrs.</p> <p>J. C. Rollo, M.A. M. H. Gopala Iyengar. Rajasekhariah. Ramachandra Rao. Abdul Khudus. Narasimiah. M. G. Lakshminarasu. Ramachandra Reddy</p>	<p>Messrs.</p> <p>Govindarajulu Moodaliar, M.A., F.L. Nagarajah G. Hanumantha Rao, B.A. A. N. Moorthy Rao, B.A. Mir Ikbal Husain Lakshminarayana Sastry Srinivassayya.</p>	Mr. J. B. Mallaradhya.
				Lost

*Literary Meetings.*—There was only one literary meeting, on 30th August 1922, when Mr. N. Madhava Rao read a paper on the "Poetry and Science of Stars."

S. V. Krishnaswamy Iyengar, M.A., B.L., presided.

*Lectures.*—There were two important lectures. The first of these was on 29-7-1922 by Professor A. R. Wadia, the President of the Union. This was an inaugural address delivered to the members of the Union to stimulate a zest for Union life amongst the students. The subject was "Some aspects of Union Life at Oxford and Cambridge." The lecture was very well attended and was very much appreciated. The lecturer explained the lines on which he wished to work the Union in order to build up a tradition and thus enable the students to manage the Union by themselves in the course of a few years.

The second lecture was on the 12th September by Mr. K. H. Ramiah, the Officiating Registrar of Co-operative Societies in Mysore. The subject was "Co-operation." The President of the Union was in the chair. This meeting was crowded. Mr Ramiah impressed, in his usual eloquent and homely manner, upon his audience the benefits of Co-operation and Co-operative effort. The lecture was very interesting from the beginning to end, and very stimulating.

*Social*—The members of the Managing Committee were "At Home" on the 10th August 1922, to the Retiring President, Professor J. C. Rollo, and the retiring members of the Committee. A group photo was taken as a memento of the event. The Vice-Chancellor had kindly responded to our invitation. Messrs. A. R. Wadia and M. G. Lakshminarsu proposed the toasts of the guests and the Vice-Chancellor associated himself with these remarks. Mr. J. C. Rollo, Mr. K. Natarajan and Dr. Narayana Rao replied.

*The Union Elocution and Oratorical Competition.*—The Union arranged for an Oratorical and Elocution competition. The Elocution Competition in verse and prose was held on 9-9-1922 and the Oratorical Competition on 17-9-1922.

#### Verse Elocution.

Mr K. Krishnaswamy Iyengar, B.A., won the Vice-Chancellor's Elocution Medal.

Mr. M. H. Gopala Iyengar won the M. G. Varadachar Second Elocution Prize.

Mr. Syed Zia Mohamed Buckari was awarded an extra prize.

#### Prose Elocution.

Mr. C. R. Subrahmaniam won the M. G. Vardachar First Elocution Prize.

**Mr. C. Narasinga Rao** won the Union Elocution Prize.

**Mr. S. Suryanarayana Rao** was awarded an extra Prize.

### Oratorical Competition.

**Mr. A. N. Moorthy Rao, B.A.,** won the Union First Prize for Oratory.

**Mr. M. Raja Rao** won the Union Prize for Oratory.

**Mr. M. A. Venkata Rao** was awarded an extra Prize.

This year we are happy to note that students have displayed great zeal in the work of the Union and this has been most encouraging to the office-bearers and the Managing Committee. Every Saturday during the term time a meeting has been held, and we hope that no Saturday will be missed in the future.

M. G. LAKSHMINARU,  
*Hon. Secretary*

## THE UNIVERSITY UNION CO-OPERATIVE SOCIETY, MYSORE.

### A BRIEF REPORT ON THE WORKING OF THE SOCIETY FOR THE YEAR 1922.

*Business.*—Purchase and sales.

We recommenced our work on the 3rd July when the College was re-opened after the summer holidays. In the commencement we got a fresh stock of books worth about Rs. 500 and stationery worth about Rs. 150, in addition to our closing stock of Rs. 860-12-3. Besides books and stationery we stocked Khaddar worth Rs. 125, to popularise it among our students with the idea of inducing them to abandon the idea of costly dress. Our purchases in the month of July and August came to about Rs. 750; and these are the only two months when our transactions are heavy. Up to the present date our sales amount to Rs. 2,385-1-6 as against Rs. 2,370-9-0 of last year for the same period. This year the Society is allowing a cash discount of 6 pies for every rupee worth of purchase made.

*Members.*—At the close of last year there were 286 members, holding 632 shares. Some of the students are rather slow to appreciate, and join the Society. However, at present, the membership is 343 with 725 Shares. 27 student members withdrew upon leaving the College.

*Management.*—Though we have got the satisfaction that we have



been of some use to our students and have been able to meet the demands of our members to a considerable extent, still we find among some of the members a sort of lethargy or lack of appreciation of the usefulness of this democratic institution. The Society has been in existence for the last five years, and is managed purely by the students for the benefit of the students. Its primary object is to promote self-help and thrift among the members and give them scope for training in business methods. We take this opportunity to request all the students and the members of the staff not only to become members but also to further the objects of the Society. We expect from every member co-operation and effort. We are glad to say that our revered Vice-Chancellor has become a member, taking the maximum number of shares.

Our new business of supplying academical robes has been a thorough success. The new venture was taken up just before the Dasara Holidays, and the articles were ready by the time of the Convocation. Readers are no doubt aware of the difficulties of the new graduates in securing gowns and hoods for Convocation. To give them facilities we ventured upon this new line of business. This concern cost us Rs. 538-8-3, and on this account we propose to take a loan of Rs. 250, which we hope to pay back in two years. This business has already given us a revenue of Rs. 181-8-0 when the debt is cleared off the whole amount will be a capital yielding a revenue on an average Rs. 150, per annum, without any expenditure.

On the 12th September Mr. M. H. Ramiah, M.A., Bar.-at-Law, the Registrar of Co-operative Societies in Mysore, visited the Society, when some prominent members of the Society met him at an informal conference and discussed with him the affairs of the Society. The Registrar approved our new scheme.

I cannot conclude this report without acknowledging our indebtedness to our President and Vice-President, Professors A. R. Wadia, B.A., Bar.-at-Law and S. V. Krishnaswamy Iyengar M.A., B.L., for their sympathy and keen interest in the affairs of the Society. They are ever ready to extend to us their help. We owe everything to the generous help of these gentlemen. In fine, I hope this institution will steadily progress under the guidance and care of our beloved Professors.

S. VENKATESHYA.

## MAHARAJA'S COLLEGE.

**HISTORICAL ASSOCIATION.**—Membership is open to all the students, past and present of the College on payment of an entrance fee of four annas. The Association has been reinvigorated this year by the enthusiasm of the Principal, the new professor of history and the students. It commenced its work late in the month of November, and has held five meetings, one being a business meeting

Subjects on which Papers were read and discussed :—

1. "Socialism" by Mr. H. V. Venkatasubbiah.
2. "The Growth of the Papacy till A.D. 1000" by Mr. N. C. Thimma Reddy
3. "The Revival of the Empire under Otto the Great" by Mr. A. Seshiengar.
4. "India in the Vedic Age" by Mr. P. G. Krishna Murty.

At the business meeting the office-bearers and the members of the managing committee were elected.

*Hon. President.*—N. S. Subba Rao, Esq., M.A., (Cant.), Bar.-at-Law, (Principal).

*President.*—S. V. Venkateswara Iyer, Esq., M.A., L.T., (Professor of Indian-History).

*Vice-President.*—S. V. Krishnaswamy Iyengar, Esq., M.A., B.L.

*Secretary.*—Mr. N. Rangachar.

*Members of the Managing Committee.*—Messrs. H. V. Venkatasubbiah, N. C. Thimma Reddy, P. G. Krishna Murty, A. Seshiengar, S. B. Dattatraya Rao.

The programme for the remaining part of the year includes two papers to be read in the month of February and an excursion in the early part of April to a place of historical importance within the State.

N. RANGACHAR,  
*Secretary.*

**THE PROFESSOR OF INDIAN HISTORY**—Dr. Mookerji's place has at last been filled, and we welcome Professor S. V. Venkateswara Ayyar, M.A., L.T., to the University and the Maharaja's College. After a distinguished career in the Madras Christian College, Mr. Venkateswara Ayyar served in the Kumbakonam College, and, as Principal, in the Government College, Tellicherry, afterwards becoming Chief Lecturer in History in the Ceded Districts College, Anantapur, whence he has

come here. Besides taking a prominent part in the academic work of the Madras University, Mr. Venkateswara Ayyar has done a great deal of research work, which has been recognised by high authorities.

#### MAHARANI'S COLLEGE.

**GAMES CLUB.**—Our Tennis Court hardly lies idle in these days; most of us feel we have not given the finishing touch to the day's work if we do not end the day with a game of tennis. On the Durbar Day the students of the college, past and present, met in the college for a social. We were very pleased to have Mrs. Rollo in our midst that afternoon. After a few indoor games we went to the tennis court and there we had races and tennis. Mrs. Rollo then kindly distributed the prizes to the winners at the different games. Then we adjourned to the College Hall, where we were entertained to tea by our Superintendent, the president of the Games Club, and went home with a feeling that we had thoroughly enjoyed the evening. We intend closing the term with a tennis tournament which we hope will attract a fair number of competitors not only from our own club but also from the Maharani's High School club and ex-students of the College. A report of this we hope to get ready for the next issue.

E. LOENEN.

**DEBATING SOCIETY.**—Up to Christmas three meetings were held in connection with the English Debating Society, with our President Mr. Nanjundaiya, M.A., in the chair on all the occasions. The first meeting took place on the 4th September when Miss G. Arbuthnot of the Second Year B. A. Class read a paper on "Social Life." She pointed out how social activities rub off the angularities of people, and enable them to understand each other better and to co-operate with one another in a spirit of real fellowship. The meeting came to a close after some discussion as to the relative position of social life and literary study in educational institutions.

The society met for the second time on the 3rd November when Miss E. Loenen of the 3rd Year B.A. Class read a paper on "Women's position in civic and social life." A warm debate took place, but no conclusion was arrived at since the topic was largely that of the vexed question of the right kind of education for women. This topic was taken up for discussion in the next debate, when Sri K. V. Channamma

of the Third Year B. A. Class read an interesting essay. After a warm discussion, the ultimate sense of the meeting was in favour of having the same kind of education for both men and women.

B. INDIRAMMA.

**HISTORICAL SOCIETY.**—The Historical Society met only once in the first term. The meeting was held on the 12th September, when there was a general discussion on the importance of clubs and societies to college life.

The next event of importance was the visit paid by Madame Sylvain Levi, the wife of the famous Indologist and Miss Green, an American lady social worker. These distinguished visitors were taken over the College by our president Sri Abhayambal. Miss Greene delivered a very interesting speech on "Some aspects of American life." The geniality of the visitors and their sincere sympathy with Indian life won the hearts of all.

At the close of the month of October Miss Loenen of the Third Year B. A. read an interesting paper on Napoleon, when one of our students Sri Channamma was voted to take the chair. She proved quite a good chairman. A few more words from our President Sri Abhayambal brought the meeting to an end.

At the next meeting Professor J. C. Rollo delivered a most entertaining lecture on "Life in an English university." By the magic of his eloquence he took us to Oxford and made us live amidst the glories of that wonderful university. We are grateful to him for his delightful lecture, and we cannot help wishing that he would kindly give us some more. We were also very much pleased to have Mrs. Rollo amongst us that evening.

Before the year closes we hope to have a few more pleasant meetings and lectures. Miss Horner, who has come to Mysore for a short visit, has kindly promised to speak to us about Newnham next week.

**KARNATAKA SANGHA.**—The Sangha commenced its work on the 25th October 1922. An interesting paper on "The merits and demerits of modern civilisation" was read at the first meeting by Sri K. V. Channamma of the III Year B.A. Class, and a very lively discussion followed. Some emphasised the merits of modern civilisation while others spoke of its demerits at length. At the second meeting Sri M. V. Kalyanamma of the I year B.A. Class read a long paper on "The necessity for

legal restrictions in matters of religion." Several members took part in the debate that followed. The sense of the meeting was in favour of such legal restrictions. Both the meetings were well attended and were presided over by Mr. B. Krishnappa, M.A., Assistant Professor of Kannada. Our thanks are due to him and to our respected Superintendent Sri K. D. Rukminiamma, B.A., who has been encouraging us in our efforts by giving us very useful advice from time to time and by attending our meetings.

The third meeting was held on the 19th January 1923, when Miss Stephen, very kindly gave us an address (in English) on "The life of English women," which held us all spell-bound for over an hour. Our lady professors and some of the lady teachers of the High School also came to hear Miss Stephen, as her fame as a good speaker had preceded her. We had the good fortune to hear for the first time from the mouth of an English lady of the outlook on life of the generality of English women. We were struck by the fact that after all there really was no fundamental difference between the east and the west in their views on life. We felt very thankful to Miss Stephen for helping to dispel from our minds what we now know to be illusions with regard to some domestic features of woman's life in the west. In proposing a hearty vote of thanks to the learned lecturer of the evening, the Secretary expressed a fervent desire to hear more from Miss Stephen.

K. V. CHANNAMMA.

LITERARY SOCIETY.—During the term we had three meetings in connection with the Reading Circle and though a fourth unfortunately fell through on account of the indisposition of the speaker, we hope to make up for it during this term. At the first one Miss Piggot of the Church of England Zenana Mission gave us a short and interesting address on child welfare, a subject very near our hearts. She showed us a few diagrams and promised to give us a real lecture later on. Miss Piggot was warmly thanked for her kind interest in us. At the second meeting Indiramma of the Third Year Class read an interesting paper on Miranda. For the first time we had a student in the chair, Ernestine Loenen of the same class. The subject being a favourite one many others spoke, and the chairman wound up with a speech which was both amusing and good. At the last meeting Mr. H. S. Nanjundiah, M.A., Lecturer of our College, read us a very appreciative paper on Omar Khayyam. The subject was sympathetically and instructively dealt with and gave us much pleasure.

## A SCHOOL OF PHOTOGRAPHY AND PRINTING.

We have received and read with particular interest the prospectus of a school of photography and printing which has been established in Poona. This line of work has great possibilities for the student, and the carefully-planned courses of this school, whose staff consists of experts, most of them with a long record of work and training in their respective subjects, are likely to lead to good posts and a successful career. The general secretary is Mr S B Sahasrabudhe, B A. Honours Medallist, City and Guilds of London Institute, who instructs in the theory of photography and printing crafts. He has had a particularly good training in photographic matters and has displayed special ability and enterprise in this field. He is keen on fostering the manufacture of photographic plates in India, and has secured the high praise of Mr Alphonso Atty, F R.A.S., of the Government Photozineo, who comments on his inventive powers and considers him certain to succeed in this manufacturing enterprise. Such an industry seems to promise a bright future to successful students of the school. Among the other instructors are Mr. A. V. Patwardhan, B. A., Senior member of the Servants of India Society (instructor in office management in printing houses) and Mr. V. N. Joshi (instructor in lithography), who has had eight years' experience in lithographic printing houses in Germany. Students are admitted from the age of fourteen. We have no information as to the fees charged. It is proposed to establish an employment bureau for students.

The scheme seems a promising one, and we give it prominence because in these days when the employment of graduates and "school-finalists" is an increasingly difficult matter, and when, further, it is realised that upper-school and college classes are crowded with students for whom a handicraft would be a far more satisfactory career than anything they can attain to through such training, a remunerative and highly "respectable" line of life such as that of the photographer or plate maker is well worth choosing. Particulars as to the school may be obtained from Mr. S. B. Sahasrabudhe, B.A., 689 Sadashiv Petb, Kala Houd, Poona City.



# THE MYSORE UNIVERSITY MAGAZINE

DECEMBER 1922.

## EDITORIAL.

CALCUTTA UNIVERSITY.—There can be no university in India that does not deeply sympathise with Calcutta University in its present financial difficulties, which are due to noble educational ideals strenuously pursued. It is to be hoped that the appeals for such financial assistance as may make that university more or less independent of grants may succeed. Calcutta suffered greatly through the "national education" movement, but this suffering was even less deserved than in the case of other universities, for Calcutta, of late years, has made special and successful efforts to foster indigenous culture. Those twenty-two lecturers in Sanscrit for thirty-three students (we referred to them in an editorial in our issue of November, 1919) may have represented an error of policy, but an error that strikingly exemplified the determination to lead the way in this matter; and in many a field of Indian learning the world is the better for Sir Asutosh Mookerji's scheme of post-graduate study and research. It is to be hoped that even those of the wealthy in Bengal who are hostile to the present system of education will realise how closely allied are such efforts to that which is best in their own ideals, and will help the university towards freedom.

We feel, however (this "we" is purely editorial, and does not necessarily represent this university), that this "post-graduate study and research" idea has occupied too large a space in the Calcutta programme. Normally, the Calcutta senate would, no doubt, have kept it within due bounds. The independence one would desire for that senate is independence not merely from extraneous influence but also from dictatorship. For a long time it has been merely a tool in the hands of Sir Asutosh Mookerji, who not merely speaks but thinks rhetorically, and whose inspiring ideas are not always modified by consideration of all the circumstances, and all the duties of a university.



A free senate would never have tolerated the idea that professors (under that sort of pressure which results in voluntary self-denial) should be paid half salaries, and I would have seen the strangeness of Sir Asutosh's suggestion that other people (the post-graduate lecturers and their families) should "starve" that the university might be free to reject a reduced grant. If a man finds his debts exceeding his resources he must cut down his expenses to meet his liabilities or submit to the charge of immorality, and the case of a university is precisely the same. No ideal can excuse in any individual or corporate employer the non-payment of employees or even the friendly suggestion to them that they should waive such a trifle as their livelihood. But above all, a senate accustomed to think for itself and not as its leader bids would have recognised that the principal responsibility of a university is to the main body of its students. To those thousands and thousands of average men who enter Calcutta University no thought, in comparison, has been given. They are purveyors of funds to be spent upon others. Mr. H. R. James (in a defence which is much more of an attack) speaks of his mistrust of a system based on "large numbers, low fees and a disregard of standards"; and these principles, whether in ordinary or in post-graduate work, constitute a violation of university responsibility. The obligation of the university to the ordinary student is peculiarly great in India, and Calcutta's vast body of ordinary students have been, and are, the university's greatest opportunity. Even research must take a second place. Attention, however, has been focussed on research, and on far more kinds of research than the university could afford, and sometimes on kinds not specially suited to that university. Further, men have been encouraged in expensive advanced studies who have not the exceptional ability necessary for profiting by such studies. The Calcutta University Commission was friendly enough, yet was constrained to ask—"What is post-graduate study? . . . At other universities 'post-graduate' students are select and few. Post-graduate students under Calcutta University number 1,607. Either then the students of the Calcutta University are extraordinarily more advanced than the students of other universities, or 'post-graduate,' when applied to Calcutta M.A. and M. Sc. classes, has somehow changed the quality of its connotation."

Offering homage to one of the greatest men in India, we yet wish that he had not so docile a following: the very docility balks his own vigour and insight. Would that the Calcutta University senate might realise, first, that so long as the university is not financially independent they are responsible in their policy to Government,—which, after all, is now essentially an Indian government and is certainly conscious of the

general educational needs and capacities of the province; and, second, that their prime duty is the moral and intellectual culture of the ordinary student.

**RESEARCH SCHOLARSHIPS.**—In accordance with the recommendations of the University Council, Government have sanctioned a scheme for research scholarships, the only modification of the Council's proposals being that each scholar is to receive Rs. 75 instead of Rs. 100 per month. Four such scholarships will, if deserved, be awarded each year, the recipients being, as a rule, masters of arts or of science. The work is to be done under the direction of professors; in special cases scholars may be sent to other universities; and the results of the research work may be published by the University, the publications being its property. This scheme is a great thing for the University, and is absolutely certain to lead to the production of work of high and permanent value, advancing scholarship and gaining reputation for the University. It is to be hoped that never, even in a single case, will the true meaning of research work be lost sight of. It will be for the good of the University, and of scholarship, if the University Council are absolutely ruthless in the matter. Post-graduate study is not necessarily research. The number of men capable of research work is exceedingly small: no doubt there will be years in which not even one is available. In such cases it will be far better to let the money lapse than to give it to a man without the necessary scholarship and originality. Other universities have suffered in reputation, and futile work has been done—even published—because of a mistaken kindness in this matter. Certain American universities give us an important warning. Nor is the matter one simply of rigorous choice of scholars. It has to be recognised that only in a few subjects is research possible in India. As regards western literature, history or philosophy it is absolutely impossible, mainly because the necessary documents are not, and never can be, available. In other matters lies our opportunity. The great possibilities of scientific research have been amply demonstrated in the Central College as well as the Tata Institute, and the special distinction in research of our professors of physics and chemistry provides the students with an almost unique advantage. The other sphere in which research is possible in this university is that of oriental learning. Here indeed is the greatest opportunity; and no doubt a certain modification of both our pass courses and our more advanced courses is desirable that they may better serve as a preparation for such work.

“HEART AND HEAD.”—“The education you get in this school, and will get in the University, is all but worthless. It pertains to the head only : *the culture of the heart has no place at all.* Your admirable teachers are compelled to administer to you a *ready-made mixture of knowledge*, which eventually produces the graduate whose *heart throbs for himself but does not throb for others.*” Such in effect, is the message given by a learned lawyer to the boys of one of the best of our high schools, on the annual school day, in the school premises, under the auspices of the school. The italicised words are his own. The speaker is a public-spirited citizen, and the speech is animated by love of India ; but it is hard to understand the attitude of one who, in proposing a school’s health, seeks to bring it into contempt and to wrest the heart of the pupils out of their work. It is a cruel thing to tell a boy that his daily task is not worth while. It would be cruel even were the statement true. Nor can true patriotism be fostered in the schoolboy by telling him that his State (an Indian State, to which he owes his first allegiance) has planned a rubbishy educational course for him. There are places where such sentiments can legitimately be uttered, but the schoolboy is no judge of these matters, and is only injured by such speeches. As for the sentiments themselves, we have once again the cant formula, “This system trains the head, not the heart.” The study, for example, of Shakespeare, Milton and Shelley, of world-movements in history ; of ethics ; of science with its manifold suggestiveness and the inspiration of its law—all these studies are purely intellectual ! There are, indeed, hearts that respond to none of these things, but they are leathern hearts, unresponsive to any culture. Such certainly are not the hearts of those whom we meet in our college classes. The heart, says this speaker, cannot be educated through books. His opinion is opposed to that of every race and generation of men, since the invention of writing. If he denies that a true book, “the precious life-blood of a master spirit,” is one of the most potent influences upon character, he belies Indian as well as western literature ; and if he means that books fail with our students because the personal touch of the interpreting teacher is lacking, then he knows nothing of what is done in our schools and colleges. Finally, to say that our graduates are consummate examples of selfishness is a sorry slander of his countrymen. He seems to have catechised some of our graduates upon “life problems”—a sufficiently elastic theme. We can well imagine that he did not get much out of them. No doubt, after satisfying the university examiners, they felt little inclined to submit to the inquisitions of a new and self-constituted examiner who obviously despised them and all that they had done.

**MR. GANDHI ON NATIONAL EDUCATION.**—Very different from the sentimental extremism of the speech referred to in the previous note is the conviction that a considerable modification of the present educational system is necessary, in order that purely Indian culture may be given its due place. This is indeed the central idea of that speaker, but his advocacy is rendered futile by an insularity of view that is only brought into relief by such interspersions as, "I am not against the foreign culture." Fervour tends to contract the view: we respect the narrowness while combating it. And since the rarest of combinations is that of intensity with catholicity, one reads with particular respect the following deliberate pronouncement on "national education" by Mr. Gandhi. We quote these words in full, for it is only by adopting the attitude and temper here indicated that India can set educational matters right.—

"My uncompromising opposition to the foreign medium has resulted in an unwarranted charge being levelled against me of being hostile to foreign culture or the learning of the English language. No reader of *Young India* could have missed the statement often made by me in those pages that I regard English as the language of international commerce and diplomacy, and therefore consider its knowledge, on the part of some of us, as essential. As it contains some of the richest treasures of thought and literature, I would certainly encourage its careful study among those who have linguistic talents and expect them to translate those treasures for the nation in its vernaculars

"Nothing can be farther from my thought than that we should become exclusive or erect barriers. But I do respectfully contend that an appreciation of other cultures can fitly follow, never precede, an appreciation and assimilation of our own. It is my firm opinion that no culture has treasures so rich as ours has. We have not known it, we have been made even to depreciate its value. We have almost ceased to live it. An academic grasp without practice behind it is like an embalmed corpse, perhaps lovely to look at but nothing to inspire or ennoble. My religion forbids me to belittle or disregard other cultures, as it insists under pain of civil suicide upon imbibing and living my own."

It may or may not be the case that no other culture is so rich as the Indian, but in any case it is supremely right that the Indian should think so, and should frame his educational courses accordingly. Comparisons need not be made (and who is unprejudiced enough to make them securely?), for the great fact is that one's own inheritance best suits one, and must come first: all else, however fine, is supplementary. Any other system impairs, though it need not destroy, the

relation between culture and personality and conduct. Whether, in making indigenous culture the centre of the educational system, it is desirable to substitute vernaculars for English as the medium of instruction is a matter for still further discussion and experiment. If this centrality is inconsistent with the use of the English medium, that medium, with all its undoubted advantages, must go, since even those advantages are of inferior importance.

**WOMEN'S SUFFRAGE IN INDIA.**—A memorable inter-collegiate debate was held recently in the Central College: in fact the day was turned into a festival, and the visitors, thanks to the hospitality of their Bangalore hosts, had the time of their lives. The motion, which was carried by a large majority, was "That women's suffrage is contrary to the Indian ideal of womanhood." Thus it was not exactly a debate on women's suffrage, the question not arising whether the Hindu ideal in this respect needed modification. No doubt the verdict was right, as referring to the traditional ideal. A short time ago the verdict would have been the same as regards, for instance, the English ideal. Even ideals, however, must change with time, good yielding place to new good, and we believe that something like the recent change in the English view of women's part in life is bound to occur in India, though more slowly and perhaps more safely. It was amusing to see that one of the speakers in the debate preached, unashamed, the old, sad doctrine, which we cannot believe to be the real Indian view, that woman's glory is the service of man, her success the success of her husband and her sons, her worthiest happiness sacrifice for their sake. This is what one finds in *Chitra*, where it is so revolting that someone has called *Chitra* "the best feminist tract ever written." The recognition of woman's rights as an entity in herself is bound to develop everywhere. Woman's rights bulk largely in the suffrage question, but the most important thing is the need for her co-operation in all affairs of public importance. It is the ultimate destiny of every country to be governed largely by its women: this is one of the most important grounds of hope for the future of the world. And India will gain immeasurably by hearing, and frequently obeying, the verdict of women not merely in those matters that are considered their special concern but in all matters. The following words, expressing this view, were addressed by Lord Lytton to a deputation (from several women's societies) which visited him recently.—"The problem which above all others must for the next few years dominate the political life of India

is that of building up a nation ; but you cannot build up a nation and leave out the women. We are trying to establish a representative system of government, but no system is truly representative which excludes from its franchise the whole of its women citizens. Therefore it is not only in the interests of the women of Bengal that they should be enfranchised ; it is in the interest of the political life of the province as a whole. Those of us who are engaged in improving its social and industrial conditions or building up its national consciousness want the help of those whom you represent here to-day. Until you have responsibility, we cannot hope for your interest and co-operation, and, therefore, the sooner political responsibility is given to you, the better it will be for every phase of public life in this province."

## SCIENCE IN POETRY.

(THE TORCH-BEARERS · By *Alfred Noyes*.)

A PROPOSAL to tell the story of scientific discovery in verse would not, perhaps, have commended itself a few years ago either to men of science or to men of letters, as likely to increase greatly the prestige of their respective spheres of culture: the attempt would probably have been considered by both to be unnecessary and impertinent. It is therefore interesting to find that the feat has been performed by a poet of established reputation, and that it has received at least the preliminary benediction of science and literature.

In the preface to the poem entitled "The Torch-Bearers" Mr. Noyes explains that the present volume is the first of a trilogy which, when completed, is to form an epic of science. This first instalment deals with the "Watchers of the Sky." From the Prologue we learn the circumstances in which the poem was conceived, and the scope of the whole work. It appears that the author was present, and was prompted to the execution of his task, on the night of the first trial of the new 100-inch telescope on a summit of the Sierra Madre Mountains:

At midnight while they paused  
To adjust the clock-machine, I wandered out  
Alone, into the silence of the night.  
The silence? On that lonely height I heard  
Eternal voices;

And, as I listened, that Aeolian voice  
Became an invocation and a prayer:  
O you, that on your loftier mountain dwell  
And move like light in light among the thoughts  
Of heaven, translating our mortality  
Into immortal song, is there not one  
Among you that can turn to music now  
This long dark fight for truth? Not one to touch  
With beauty this long battle for the light,

Wars we have sung. The blind, blood-boltered kings  
Move with an epic music to their thrones.  
Have you no song, then, of that nobler war?

Of those who strove for light, but could not dream  
 Even of this victory that they helped to win,  
 Silent discoverers, lonely pioneers,  
 Who handed on the fire, from age to age ;

. . . . .

Dreamers of dreams, the builders of our hope,  
 The healers and the binders up of wounds,  
 Who, while the dynasts drenched the world with blood,  
 Would in the still small circle of a lamp  
 Wrestle with death like Heracles of old  
 To save one stricken child. Is there no song  
 To touch this moving universe of law  
 With ultimate light, the glimmer of that great dawn  
 Which over our ruined altars yet shall break  
 In purer splendour, and restore mankind  
 From darker dreams than even Lucretius knew,  
 To vision of that one Power which guides the world ?

The part first of the poem deals with the revolution brought about by Copernicus. This forms the starting point of the story unfolded by Mr. Noyes, and is fully and clearly explained in a scene laid in the astronomer's bedroom, where he lay dying, waiting for the arrival of his new book, and holding off death until he could be assured that the results of his life's work were printed, and safe for other men to use. We are then introduced to Tycho Brahe, and in describing his life and surroundings and the atmosphere in which he worked, the poet finds his *métier* more surely than when dealing with the latter workers and their more complicated scientific outlook. Tycho Brahe is followed by Kepler, who, after the former's exile takes over his tables of the stars, and with their help discovers the laws with which Kepler's name is associated. The next section, on Galileo, consists of a series of letters between the astronomer, his daughter, and some of his friends. The interest is centred on the famous recantation made by Galileo before the Court of Cardinals, and Mr. Noyes attempts to depict the complex mental processes by which Galileo endeavoured to reconcile the publication of his views with his subsequent recantation of them, and both with his conscience. Galileo is followed by Newton, whose discovery of the spectrum, the reflecting telescope, and the law of gravitation, is presented in a direct narrative form, while his reminiscences and his speculations about the Universe are embodied in a letter written, at the age of eighty years, to an old friend. The last two characters—the two Herschels—are dealt with in a manner which suggests that their



scientific labours were found to be little suited to poetic treatment. The elder Herschel is represented as conducting a performance of Handel's "Messiah," and, beyond a passing reference to the discovery and naming of Uranus, we are given only a description of his thoughts during that performance, the kind of thoughts which naturally occur to a man of vivid imagination and poetic temperament. It may be remarked, in passing, that the background of this section is selected and utilised for the purpose of developing a certain poetic idea which is finely expressed in the concluding lines; but the method has the disadvantage that readers who are unacquainted with the libretto of the "Messiah" and who do not chance to be in tune with the poet's vein of mysticism, may miss the point, and may chiefly receive the impression of a very skilful orchestra or a very ragged performance. Sir John Herschel is placed, far more appropriately, in the solitude of the organ loft in the Octagon Chapel at Bath: there he weaves his memories around the figures of his improvised *fantasia*. They include a few interesting passages in his father's life, and the ever fascinating story of the discovery of the planet Neptune by Adams and Le Verrier.

Such, in very brief outline, is the content of Mr. Noyes' new poem. Regarded merely as a narrative, it is an interesting, fair, and as far as possible a historically accurate statement of the salient features of astronomical history from mediæval times to the dawn of the 19th century. But it is, of course, not a narrative merely: it is a poem, a substantial fragment of an intended epic of science; and it provides an opportunity to examine the relationship of science to poetry, with all the advantage of a concrete subject of reference. Whatever judgment may finally be passed on the attempt, it must certainly be taken seriously; one cannot pass it by with the sniff of contempt or the smile of amusement. It will inevitably produce a certain restiveness in the minds of many of its readers. It is presented as a challenge to the thesis that science and poetry are mutually antagonistic.

We have now to enquire what there is of permanent interest in the poem. I say permanent interest, because it is evident that a certain transient interest will be excited by the very novelty of the experiment, by the unfamiliar linking of science to verse. In the first place, then, Mr. Noyes writes with a high seriousness, with a deep conviction of the importance of his message. What he has to say is said with dignity, simplicity, and often with great artistry of phrasing; and his verses are musical, with pleasing variations of time and accent. These things, however, are but condiments: they improve the flavour, but cannot by themselves make a satisfying meal. The real purpose of the poem

is best stated in Mr. Noyes' own words. "The story of scientific discovery" he tells us in the preface, "has its own epic unity—a unity of purpose and endeavour—the single torch passing from hand to hand through the centuries; and the great moments of science when, after long labour, the pioneers saw their accumulated facts falling into a significant order sometimes in the form of a law that revolutionised the whole world of thought—have an intense human interest and belong essentially to the creative imagination of poetry. It is with these moments that my poem is chiefly concerned." It is this unifying idea, suggested by the title, that gives the poem an artistic shape, and it is the portrayal of the "great moments" that gives it much, but by no means all, of its interest. We are told, for instance, how Newton, having conceived the law of gravitation, proceeded to apply it to the calculation of the moon's orbit, and was deeply stirred when he found

The moving moon, with awful cadences  
Falling into the path his law ordained,  
and then,

"Work it out for me"

He cried to those around him; for the weight  
Of that celestial music overwhelmed him;  
And, on his page, those burning hieroglyphs  
Were Thrones and Principalities and Powers . . .  
For far beyond, immeasurably far  
Beyond our sun, he saw that river of suns  
We call the Milky Way, that glittering host  
Powdering the night, each grain a solar blaze  
Divided from its neighbour by a gulf  
Too wide for thought to measure; each a sun  
Huger than ours, with its own fleet of worlds,  
Visible and invisible. Those bright throngs  
That seemed dispersed like a defeated host  
Of one great dreamer, height o'er height revealed  
Hints of a vaster order, and moved on  
In boundless intricacies of harmony  
Around one centre, deeper than all suns,  
The burning throne of God.

It is hardly necessary to say that a poem of this length—nearly 300 pages—cannot hold the interest by means of an occasional climax. The "great moments" of scientific workers are the reward of years of patient toil, years of adventure, of hope and disappointment. All these things are recorded for us. We read of Tycho Brahe stealing out

by night into an open glade to watch the stars, and finding instead a peasant girl, to whom "he told the oldest tale on earth . . ."; or of Copernicus' wife, Susannah, all in a flutter because Sir Henry Wotton is coming to dinner to discuss weighty matters with her husband, and wondering if the great man would like dandelion leaves in his salad. These and many other incidents appeal to us with a freshness undiminished by the passage of centuries.

The question whether the poem may justly be called an epic of science—for it is evident from the preface that this is what it is intended to be—is one on which opinion is likely to vary. The claim of any poem to be called an epic must be subject to the most rigorous scrutiny, for it immediately challenges a comparison with standards which by common consent are among the greatest achievements of literature. This poem fails to conform to those standards chiefly in two respects, namely, in the nearly complete absence of dramatic quality, and in the scarcity of what may be called "reaction." There is, it is true, plenty of "action" using the term in a broad sense, but it is of a kind which does not help to define the character of the actors. A battle, for example, whether it be between armies or individuals, mortals or gods, involves the clash, not merely of arms, but of personalities: it is a playground of the emotions, and is on that account a proper subject of poetic treatment. But the struggles of men of science against mathematical obscurities, refractory chemicals, or elusive microbes are, or should be, dissociated from any kind of sentiment: they are affairs of brain or hand, and for this reason scientific work is unsuited to description in verse. Perhaps one of the most striking features of Mr. Noyes' poem is the comparatively scanty measure of purely scientific description it contains; and when it occurs, it is given in order to point a moral rather than for its intrinsic interest. Thus, when Tycho Brahe hits on the connection between the moon and the tides, Mr. Noyes subdues his scientific enthusiasm to his poetic fancy: the moon and sea are lovers; and, to develop this aspect of a newly discovered truth, there follows a charming lyric, "The Shepherdess of the Sea," one of half a dozen scattered through the poem.

The absence of dramatic quality is due partly to the nature of the material and partly to that of the poem itself. The six principal figures are not of the poet's creation: they are actual persons of whose lives we have records, and to supplement the facts of those records by purely imaginary ones—that is, to create characters for them—would perhaps have been foreign to the purpose of the poem. This is no doubt the reason why the six are, as regards personality, almost indis-

tinguishable one from another. They have their adventures, spin their theories, and achieve their results, and for the rest are media for the expression of the poet's own ideas. This is not to say that the human material Mr. Noyes has selected is necessarily unsuitable to be treated along the lines of dramatic fiction. Copernicus was contemporary with Paracelsus, and there is no great difference in the completeness (or incompleteness) of the records of their lives, yet Browning has given us a very vivid picture of the latter's character. Nevertheless, in a work the avowed purpose of which is to relate the story of scientific discovery, such treatment would be incongruous; and the author saves his poem from this incongruity by abstaining from the dramatic handling which might have raised it to a higher literary plane.

But one false note is struck. In the passage (in the Prologue) of which a portion was quoted at the beginning of this article, the man of science is presented in a setting of nobility: "silent discoverers," "martyrs of the truth," and the like. The man of science finds no place among Carlyle's Heroes; Tennyson is positively discourteous to him: it has been left to Mr. Noyes, first among writers of eminence, to provide him with a halo. This unfortunate impression, which the reader can hardly fail to receive, would be perhaps of minor importance,—for it does not impair the unity of the poem,—but that it is a defect which may possibly mislead some who are unacquainted with men of science into an erroneous judgment of the principal characters: into supposing that these are being presented in the garb of "the Hero as Man of Science." No greater mistake could be made. It is true that there is a certain nobility about one who would "wrestle with death like Hercules of old to save one stricken child"; but we must remember that, as a man of science, apart from his humanity or moral sense, he would certainly prefer to vivisect it. There is no nobility or heroism in the pursuit of science, which is undertaken commonly from personal, not from altruistic motives. If a man chooses to respond to the call of science, and even to sacrifice material gain by doing so, it is because he prefers it, and thinks himself adequately compensated for the sacrifice.

And so we come to the final enquiry: What position does science really occupy in this poem, and how far does the poem itself help us to a clearer understanding of the relationship of science to poetry? In order to answer fairly the first part of this question it is necessary for us to be on our guard against Mr. Noyes' eloquence, and against a too uncritical response to his enthusiasm. He sets out, as he tells us in the Prologue, "to touch with beauty this long battle for the light," and to sing "those who conquered, inch by difficult inch, the freedom of this

realm of law for man." These things he has done with skill and feeling; he has undoubtedly made poetry out of the lives and labours of his men of science. But it may be noted that the particular field of scientific work which he has selected is one which lies very near to the country of the poet. The science of astronomy deals in immensities, and the element of mystery obtrudes itself more perhaps than in any other science. Few people of a speculative turn of mind can contemplate the starry universe without experiencing some stirring of the emotions, or some awakening of religious sentiment. These things belong to the realm of poetry, but it does not follow, when poetry is made out of them, that the science of astronomy belongs there too. Now a careful examination of the purely scientific parts of Mr. Noyes' poem shows that in every instance the science is a pretext for developing his principal theme, or for engaging the sympathy of his readers with the human—not the scientific—side of his characters. It may be true that we can read with interest the isolated description of Newton's experiment on the decomposition of sunlight, or of the calculations which led to the discovery of Neptune, but we should be equally interested by a description of the same things in prose. We find, then, that where the interest of the poem lies (as very largely it does) in the "great moments" of the discoverers, or in their hopes and fears and disappointments, that interest is independent of the nature of their work and would still be the same if they were painters or soldiers: the science is merely a setting, like the scenery in a play. And where the interest lies in the exposition of the poet's main theme which (although he does not expressly state it) is the religious sentiment called into existence by the contemplation of universal law, it is only the results—not the processes—of scientific labour which are relevant. Other poets, handling the same theme, have left out the scientific detail which Mr. Noyes has given us, but which is not really germane to his purpose.

Thus it is evident that the poem sheds no new light on the relation of science to poetry; it merely fails to identify the two. Yet the opportunity may be taken to offer a few remarks on this subject. From some words in the preface—"Even if science and poetry were as deadly opposites as the shallow often affirm . . .," we may infer that Mr. Noyes, at least, holds that they are not. But it may be noticed that the proposition, as stated, is indefinite; and before giving our assent to it and joining the ranks of the shallow, it is as well to be quite clear about the meaning we attach to the terms "science", "poetry" and "opposite". Science, then, means the study of phenomena by means of the senses, and with the assistance of the reasoning faculty: these are

essentials. Another factor, of the highest importance to science, but not formally essential to it, is imagination. The important point to notice is that everything which is presented otherwise than through the senses, and every process which does not lie within the compass of the reason, is foreign to science. Poetry cannot, perhaps, be defined with the same precision, but still its general character is well enough understood; and it is sufficient for our purpose to note that it has invariably an emotional quality. Any subject, therefore, which can react on the emotions or appeal to the instinct may be the raw material of poetry. It often happens that science and poetry have raw material in common: for example, a rainbow, a flower, or a nightingale. But the point of view and the method of treatment in the two are fundamentally different. A rainbow, to the poet, may be a bridge, a symbol, a message, a figure in the Volume of Nature,—anything almost, but always something by means of which he can appeal to the emotions. To the man of science, a rainbow is the sensation produced by the reaction of his brain to a complex series of electromagnetic impulses. Neither can quarrel with the other, so long as each stands on his own ground. Both science and poetry aim at presenting a particular aspect of the truth in regard to their subject matter, but whereas the truth expressed by science must of necessity be amenable to the test of observation or experiment, that is to say it must in the last resort be evident to the senses, the truth as presented by the poet cannot be submitted to the same test: the only criterion of poetic truth is its acceptance by the inner consciousness of man; in other words it must be felt, or perceived independently of the senses. For this reason poetry thrives in an atmosphere of mystery, and as soon as a subject is divested of mystery, it ceases to have any poetic interest. Now scientific progress consists very largely in “explanation,” that is, in showing that a given phenomenon is a particular instance of the operation of a general law; but in any case, between the limits within which a scientific investigation has been carried out, there is no mystery, since every stage in the investigation has been checked by reason and observation. If the object of all scientific enquiry were to be fulfilled, and every phenomenon shown to be related to every other phenomenon, and in what manner, then the whole field of scientific labour would be finally purged of mystery: but the scope of poetry would be in no wise restricted. It is therefore evident that although science and poetry are “opposite” in one sense, namely, in the method of treatment of their subject, they are not antagonistic since they do not interfere with one another. In other words, poetry is not contra-scientific, it is non-scientific. Science may indeed be introduced into poetry with fitness, but

only so long as it imports a human interest ; and even then the poetry will only begin where the science ends. A skylark may occupy a prominent place in a poem, but it will only begin to have a poetic quality when it ceases to be a bird.

F. I. USHER

## THE EUGENICS OF PLATO.

THE master-consideration of Platonism centres round the conception of the state. The state is greater than the individual. Individuals perish, but the state is undying. It is the traditions of the state which give colour and tone to the life of citizens. It stands not for the mere continuity of life, but for the continuity of the best life. Put all these ideas together, and it immediately follows that the quality of the human generation must be a topic of absorbing interest and a matter of supreme importance to all who are concerned in the future of humanity. Political philosophy, if its aim is the production and nurture of fine men, is really, or ought to be, Eugenics as the science of race culture. Plato was not conscious of the term eugenics, but he was too astute a thinker to have lost sight of such an important consideration. It is surprising that all the succeeding political philosophers right down till our own times had not the breadth of foresight to have devoted any time or any thought to striking the problem of human regeneration at its root. Eugenics is still in its infancy, its ideas are still in the stage of incubation; its principles have not yet made a wide appeal and the eugenic portion of Platonism still continues in that unrealised state in which the woman problem continued for twenty-two centuries in spite of all his enthusiasm. But the future may have in its womb developments more wonderful than the gushing tide of the revolt of modern woman. Future ages will perhaps hail Sir Francis Galton, the founder of Eugenics, as one of the greatest benefactors of mankind, but scholars will have to admit that Galton had been anticipated in however crude a way by the great thinkers of ancient Greece: Plato and Aristotle. The term eugenics is new, but the moving ideas of the science are old and thus it is that Plato once again can claim a place in the rank of modernists.

It was only in 1833 that Galton coined the term "Eugenics" in his now famous book "An Enquiry into Human Faculty" and in a paper read before the Sociological Society in London in 1904 he defined Eugenics as "the science which deals with all influences that improve the inborn qualities of a race; also with those that develop them to the utmost advantage." In 1908 his munificence established a chair for Eugenics at London and since then his pioneer work has been enthusiastically continued by a band of earnest followers. The whole inquiry is yet tentative; its conclusions will have to be rigorously tested before



being practically applied on an extensive scale, but we may take it that its foundations are sound. Thanks to the work of Darwin and the other leading evolutionists from Spencer and Wallace to Bateson and Weismann the fact of evolution has been rigorously established and in its train it has brought a scientific recrudescence of belief in heredity, and thus made eugenics possible. For eugenics is essentially an inquiry into the principles of heredity, the possibility and the method of governing its course.

Belief in heredity is not new. It is as old as the Hindu civilisation. The whole organisation of the caste-system has been maintained on eugenic considerations, however faulty, even if its institution was originally economic in motive. But the very rigidity of the caste-system has deprived it of all eugenic worth. It was the glory of Plato that he entered into the whole question of heredity not merely on the *a priori* considerations of birth, but also on the basis of individual worth.

We shall not here discuss the aims and principles of modern eugenics. At present we shall confine ourselves only to a consideration of Plato's views, but not without a warning that we cannot expect a scientific rigour in them for he had not the data, as furnished by evolution, on which modern eugenics has been enabled to build.

There was a wise Frenchman credited with the profound remark that the education of a child must begin twenty years before its birth. If Plato had been pressed, he would have given an identical reply. In the *Laws* (V. P. 169) \* the Athenian stranger raises this point. He suggests that the body should have most exercise since then it receives most nourishment. Cleinias is sceptical about it and inquires if this great amount of exercise is to be imposed even upon newly born infants, and then the Athenian stranger unhesitatingly answers: "Nay, rather on the bodies of infants still unborn." And this end is to be attained by the woman in a delicate condition walking about and taking proper exercise so as to "fashion the embryo within as we fashion wax before it hardens." Plato had a strong faith in the influence of heredity. Both in the case of Charmides and of Alcibiades he rapturously dwells on the nobility of their ancestry. To Charmides Socrates says (I. page 14) "Indeed I think that you ought to excel others in all good qualities; for if I am not mistaken there is no one present who could easily point out two Athenian houses, whose union would be likely to produce a better or nobler scion than the two from which you are sprung. There is your father's house, which is descended from Critias the son of

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\* The references are to Jowett's Edition.

Dropidas, whose family has been commemorated in the panegyrics, verses of Anacreon, Solon and many other poets, as famous for beauty and virtue and all other high fortune: and for your maternal uncle, Pyridampes, is reputed never to have found his equal in Persia at the court of the great king or on the continent of Asia, in all the places to which he went as ambassador, for stature and beauty." To Alcibiades too Socrates pays a glowing tribute (II. page 463): "You are among the noblest of citizens, highly connected both on the father's and the mother's side, and sprung from one of the most distinguished families in your own state which is the greatest in Hellas." Later in the same dialogue Socrates makes Alcibiades admit that those who are well born and well bred are the most likely to be perfect in virtue. Thus it is that heredity is recognised as a fact, but Plato is keenly aware of the possibility of degeneracy in the offspring of the noble and the virtuous, and also of the high worth in the offspring of the lowly. Plato expounds this idea in that beautiful Phœnician tale he develops towards the end of the III book of the Republic. He starts from the idea of inequality as being fundamental and seeks to persuade all that in the composition of those who have the power of command, God has mingled gold. Others have only silver, while still others, husbandmen and craftsmen, have only brass and iron in their souls. Believing in the purity of the race, he thinks it likely that parents having gold in their souls would have children like themselves and so forth. But Plato was not the slave of an abstraction as the Hindus have been. He knew it to be quite likely that parents of the higher classes may yet beget children fit only for the lower classes, and they would have to be relegated accordingly to the lower class. Likewise he recognised the possibility of the parents of the brass and iron class breeding children of a higher worth, in which case they would automatically be entitled to a place in one of the higher classes according to merit. The fluidity of Platonic classes is in striking contrast to the rigidity of castes. But this very uncertainty of children being always like their parents makes a rigid scrutiny of them desirable. The character of the parents is no sufficient guarantee of the worth of their offspring. But Plato has confidence enough in the truth of heredity to lay it down as a general principle that "the best of either sex should be united with the best as often, and the inferior with the inferior as seldom as possible" (Cf. Republic III. page 153). Hence on the analogy of the selective breeding of animals Plato institutes in the Republic hymeneal festivals where under the supervision of the guardians of the State the best males are allotted to the best females with a view to the procreation of the best children possible.

In order to ensure the physical fitness and maturity of parents, a man is not to procreate children before twenty-five or after fifty-six, and a woman is to be a mother only between the ages of 20 (16 as in the Laws) and 40. Any union of men and women beyond these limits is strictly discountenanced and an express proviso is laid down that any embryo as the result of such a union is to be prevented from seeing the light of day. Those births alone are legitimate which have been expressly permitted by the State. The others are bastard creation which may be done away with.

Compared with the statistical methods of modern eugenics Plato's faith in heredity as well as his autocratic directions about breeding have the appearance of a crude empiricism. But let it not be thought that Plato presumed to know more than he really did. Even at the moment of his highest triumph: the imaginary construction of an ideal republic he knew that it was bound to degenerate, for in the interests of truth he had to admit: "to the knowledge of human fecundity and sterility all the wisdom and education of your rulers will not attain; the laws which regulate them will not be discovered by an intelligence which is alloyed with sense, but will escape them, and they will bring children into the world, when they ought not." (Cf. Republic III, page 250.) In the Laws again (Cf. V, page 168), he recognises the extreme difficulty of legislating about private life, however desirable it be, and therefore contents himself with a talk about these topics, a talk however which is refreshingly frank and stimulating. However inconclusive and questionable a good many of his eugenic directions may be, the net result of his discussions certainly shows his farsightedness, and gives a promise that if a Darwin or a Galton were born in his state, neither of them would have failed to secure his heart-felt patronage.

Proceeding on the assumption of the truth of heredity he inevitably comes to feel that the question of marriage is the most vitally important to the state. An *a posteriori* justification of his view was found in the history of Sparta. Selective breeding had been carried on in this state for generations after generations; the principle of selection had been physical strength; and through this and a rigorous system of physical and military training Sparta had maintained for nearly seven centuries her great reputation as the sinews of Hellas. Athens at the height of her glory in the Periclean days was not superior to her rival in military strength, and the close of the Peloponnesian War showed how the strong arm can overcome the fine brain. There was something commanding in such a state. Plato himself felt the fascination, but he was too great an Athenian to allow himself to be dominated

by the solitary consideration of courage. He wished to evolve a race of men physically strong and intellectually keen, and this double consideration made heredity a highly complex problem. In Sparta the marriage tie had no sanctity as such, and extra marital connections of husbands and wives were not looked down upon, provided that the parties were strong and their union promised a hale and healthy offspring. An old Spartan was once asked by a stranger, what a Spartan would do in the case of adultery and the answer came: there can be no adultery in Sparta. Adultery is only a corollary of marriage, and marriage in the strict sense Sparta never countenanced.

Plato was aware of all this, and devoted as he was to the ideal of the state he was prepared to introduce the communism of wives in his state. This idea was developed only in the Republic and although there he lays down the law "that the wives of our guardians are to be common," the logic of facts requires that this communism be extended to all the citizens, and the whole description of hymeneal feasts as well as the recognised possibility of brass offspring to golden parents, or of a golden offspring to brass parents would lose all its force if the communism be limited only to the narrow class of guardians. But once extend this to all the citizens, all the force and all the wisdom and all the precautions of the guardians will not avail to stem the full tide of youthful passion. Absolute abolition of marriage and family relations is a heroic remedy against which all human nature rebels. Marriage and family in one form or another must constitute the basis of any political fabric whatsoever. The utmost that is humanly possible is a certain elasticity in marriage relations, a certain freedom of divorce. The limits of these will have to be rigidly thought out in a way best suited to the highest interests of humanity and it is this compromise which Plato ultimately adopts in the Laws.

The true *raison d'être* of marriage is correctly diagnosed by Plato himself when in the Symposium (I. pages 577-8) he recognises generation as "a sort of eternity and immortality" to a mortal creature. "Marvel not" says Socrates, "at the love which all men have of their offspring; for that universal love and interest is for the sake of immortality." But this immortality is the immortality of the best life. Hence in the Crito (II. page 146) follows the principle that "no man should bring children into the world who is unwilling to persevere to the end in their nurture and education." The capacity of the parents to rear a family in efficiency is definitely limited, and the essential reasonableness of Plato's injunction can be fully appreciated, *viz.* to see that their families do not exceed the means, "having an eye to poverty or

war." He mentions this as an attribute of the happy primitive life, uncontaminated and unspoiled by the soft delights and the enervating luxuries of an advanced civilisation. But nothing shows the ripe wisdom of Plato so much as his knowledge of the evil effects of an excessive interbreeding. In the *Statesman* (II. page 517) the Eleatic stranger is made to argue: "The quiet orderly class seek for natures like their own, and as far as they can, marry and give in marriage exclusively in this class, and the courageous do the same; they seek natures like their own, whereas they should both do precisely the opposite. . . . Because courage when untempered by the gentler nature during many generations may at first bloom and strengthen but at last bursts forth into downright madness. . . . and then again the soul which is over full of modesty and has no element of courage in many successive generations is apt to grow too indolent and at last to become utterly paralysed and useless. . . . indeed in this single work the whole process of royal weaving is comprised—never to allow temperate natures to be separated from the brave but to weave them together, like the war and the woof, by common sentiments of honours and reputation, and by the giving of pledges to one another; and out of them forming one smooth and even web, to entrust to them the offices of state" Thus he emphasises a due mixture of different natures so as to evolve a harmony of life, the harmony of a just soul. Apart from the nature of resulting qualities, interbreeding of an excessive kind has a fatal effect on fertility, as has been the experience of animal breeders and this danger marks the limit of the unions of the very best among men and women.

Nothing so characteristically marks the difference between the Republic and the Laws as the frank recognition in the latter that questions affecting marriage selection cannot be settled by any "compulsion of written law." Public opinion, right motives and worship of the state are the only things possible. If in the Republic no sexual union is hallowed, which has not already received the hall-mark of the guardians' approbation and sanction, in the Laws occurs an explicit recognition of the permissibility of an individual's desire (V. page 154): "Whenever any one over 25 years of age, having seen and been seen by others, believes himself to have found a marriage connection which is to his mind, and suitable for the procreation of children, let him marry if he be still under the age of five and thirty years." A few lines later on he pens his great principle of all marriage: "Every man shall follow not after the marriage which is most pleasing to himself but after that which is most beneficial to the state." He recognises indeed the

"necessity of some degree of desire, in order to cement and bind together diversities of character," but he also recognises that a desire which is not created by time insensibly dissolves friendships from a feeling of satiety" (V. page 157). It is not absolutely clear to what extent Plato is prepared to recognise the claims of love in marriage and this constitutes a definite cleavage between him and the modern feminists. The claims of love are paramount in the feminism of marriage, and it is a faith that such marriages alone make for happiness and generation of good children. A remarkable exception to this principle may be found in the case of the great Goethe whose mother bore no great love to his father. But we believe the feminist faith in love is valid, if by love is meant not the passing desire of the moment, but a full-blooded absorption and devotion tested by time. It is not impossible that humanity will perhaps come to a time when there will be no essential conflict between the claims of love and the claims of society. Marriage generally in the past and sometimes even in the present has too often been regarded from the point of wealth, high birth and the will of parents. All these considerations seem to be essentially hostile to a true marriage which can rest only on the solid basis of mutual knowledge, mutual sympathy, mutual desire. There is a profound wisdom in Plato's recognition of the age of 25 in men and 20 in women as the right age of marriage. It allows for a full development of physical powers; it ensures the capacity and knowledge requisite for the up-bringing of families. Some of the recommendations of Plato although exaggerated in some respects show a great insight into the foundations of marriage; *e.g.*, he says (Laws V. page 153): "People must be acquainted with those into whose families and whom they marry, and with those to whom they give in marriage; in such matters, as far as possible, a man should deem it all important to avoid a mistake, and with this serious purpose let games be instituted in which youths and maidens, shall dance together, seeing one another and being seen naked at a proper age, and in a suitable occasion, not transgressing the rules of modesty." He condemns the rich marrying the rich, and the powerful marrying the powerful. He would rather have a weaving together of the different qualities of humanity. Plato is very vague in this direction (Laws V. page 154), but it is a vagueness which was inevitable in those days.

Marriage selection, however important, is only the beginning of eugenic realisation. The nature of married life itself is equally if not more important and with the usual thoroughness of Plato he would lay down rules of guidance for the begetting of children and threatening with

the terrors of law any citizen who would disobey them." Drunkenness is always improper . . . and peculiarly dangerous when a man is engaged in the act of marriage ; at such a crisis of their lives a bride and bridegroom ought to have all their wits about them—they ought to take care that their children are born of reasonable beings . . . Moreover they ought not to be begetting children when their bodies are dissipated by intoxication." (V. page 157). He specially institutes women-overseers to see that these rules are observed and those who infringe them can be reported to the guardians of the law, and ultimately to the people. And if the people are satisfied, the delinquents are subjected to several disabilities ; not being allowed to go to weddings or to thanks-giving after the birth of children and if they do go they may be struck with impunity by any one. Adultery is punished in the same way.

The interests of family life are further safeguarded in the Laws though not in the Republic by limiting the right of a woman to public offices. She can hold it only at the age of forty, and in case of military service he says : " let the time of service be after she shall have brought forth children up to fifty years of age " (Cf. Laws V page 167). The essential object of marriage whether from the stand-point of the state or of love may in course of time be frustrated by an unforeseen conspiracy of ugly facts. Modern feeling has come to recognise the necessity of divorce under certain conditions as an essential corollary to the whole institution of marriage. Plato was not behind modernism in this respect. He recognises divorce as justifiable in cases of unfruitful marriage, as also in case of " an unfortunate incompatibility of temper." (Laws V. page 318). Extreme feminists of to-day in their fanatical zest for divorce on all possible grounds are not in the habit of considering dispassionately the future of the children of divorced parents. But Plato's loyalty to the immortality of the state and humanity makes him regulate the future of widowers and widows. " If a woman dies, leaving children, male or female, the law will advise rather than compel the husband to bring up the children without introducing into the house a step-mother, but if he have no children, then he shall be compelled to marry until he has begotten a sufficient number of sons to his family and to the state . . . . If a widow appears to be too young to live virtuously without a husband," the superintendents of marriage are to consider the case. (Cf. V. page 319.)

The essential sanity of Platonic modernism also shows itself in the positive discouragement and dislike he shows for bachelors. A man is declared guilty of impiety, who voluntarily deprives himself of the gift of immortality. He who has not married even by the age of thirty-five

is condemned to pay a yearly fine of a certain amount "in order that he may not imagine his celibacy to bring ease and profit to him." (Cf. Laws V. page 105). Such a man is branded as "unsocial and alien among his fellow-citizens." (Cf. V. page 155). He is not entitled to any honour from the young, nor to any obedience. The legislation of the sort suggested by Plato resembles the principle of a special tax on bachelors, which has so often been advocated in modern advanced countries.

If we omit the curious institution of a body of women overseers to look after the purity of the sexual relations of young couples, there is not a little in Plato's discussion of marriage, which has not been fervently echoed from one or the other platform of modern movements. An intimate knowledge of the parties before marriage, a physical inspection of their bodies, maturity of age, absence of dowry, freedom of choice, freedom of divorce, economic and eugenic considerations in the breeding and rearing of children—all these are factors which form the universal contents of a true philosophy of marriage. The fantastic communistic ideas of the Republic have yielded place to a sober consideration of the bedrock of all civilisation: a sane and an equitable system of marriage. Woman is not degraded to the position of a chattel; her economical and political equality is recognized in so far as it does not conflict with the higher duty of women, to be mothers of good citizens; the humanity of widows is not sacrificed to the soulless fetish of the sanctity of marriage which allows polygamy to men and prohibits the remarriage of even young virgin widows. The tragedies of infant marriages and infant mothers do not occur in his régime. Equality, purity and eugenism are the only qualities he rigidly emphasises and they are just the qualities which raise marriage to the pinnacle of divinity and make it the grand instrument of human immortality and human goodness.

Next after the community of wives nothing in Plato has come as a greater shock to modern sentiments than his pitiless method of dealing with deformed or diseased infants. After having made elaborate provisions for the right unions there is a likelihood that the offspring of these unions, would be a healthy breed. All births outside these sanctioned unions are bastard. Born of unions in defiance of all eugenic considerations, they are assumed to be incapable of a healthy growth, and Plato coolly recommends them to be transferred to other lands, to be abandoned, or to be done away with. Even in the case of legitimate births, there is a chance of deformed or weak children to be born. They too are to meet this same fate as bastards.



Closely allied to his antipathy towards weak and deformed infants is his antipathy towards chronic invalids. In the Republic he praises Asclepius as a statesman, because he undertook the care only of those who could live healthy and useful lives after being cured and refused to cure a man, who could not live in an ordinary way. He detested the idea of lengthening out good-for-nothing lives, or having weak fathers begetting weaker sons. Plato did not mince words : in praise of the sons of Asclepius he says " They would have nothing to do with unhealthy and intemperate subjects, whose lives were of no use either to themselves, or others ; the art of medicine was not designed for their good, and though they were as rich as Midas, the sons of Asclepius would have declined to attend them." (Cf. Republic III p. 96). He sums up the whole discussion in these bold words : " those who are diseased in their bodies, they will have to die ; and the corrupt and incurable souls they will put an end to themselves." (Cf. III p. 98).

Stern as these ideas of Plato are, they were not absolutely unknown in his own days. Militarist Sparta was just the ground wherein ruthlessness could blossom unhindered. But apart from considerations of mere sentiment there is a good deal to be said in favour of his view, provided of course our knowledge of eugenics and medicine were so perfect as to enable us to judge which cases of infants and invalids admit of a healthy growth, and which are beyond all cure. The proviso we grant, is a difficult one, but assuming its possibility as a matter of argument, it would be difficult to show on any rational grounds why they should continue to exist who have outlived their usefulness to society and are merely lingering in a perpetual woe, which cannot be pleasant either to them or their dear and near ones. There is a ruthlessness which can claim kinship with the highest kindness. In a society such as in Europe dominated for twenty centuries by the extreme individualism of Christianity, in which every pious soul regards this life as a mere transition stage and as a preparatory ground for the joys of heaven or the eternal evils of hell, the great ideas of Plato can have no soil to flourish in. Where each individual in a sickly way nourishes his own salvation, and holds out a helping hand to others as a payment to get a footing in heaven, the eugenics of Plato appear weird and cruel. But the essential morality of Platonic teaching comes out when we compare its elevated motives with the indiscriminate slaughter of embryos so common in Christian Europe to-day, or with savage indiscriminate infanticide especially of little girls whom nature might have fitted to be the mothers of the Gracchi or the Hampdens, and who yet were coolly murdered

because girls carried with them the humiliating badge of an inferior sex. What can be more immoral than this infanticide which flourished so extensively in the hoary land of India which is not yet free from it beyond suspicion? Plato's recommendations fall into insignificance when compared with the cruelty which condemns the gushing blood of young Hindu widows to stagnate in their veins, or forces them to slake their hands in the blood of their innocent infants. But great ideas find no easy entrance to the minds of people, surfeited with the moral platitudes of superficial kindness and steeped in a hypocritical respectability. Plato would have branded as a sin against society any destruction of infants male or female, who had in them the making of healthy citizens. He wages a war only against those diseased infants and invalids who bear the stamp of degeneracy, and can be nothing but sources of misery to themselves and to others. If the aim of morality is the realisation of a good and healthy society there can be nothing more moral than the aims of Plato, and to his detractors he could reply in those lofty words he puts into the mouth of Socrates in the *Apology*; (II. page 123): "I believe that no greater good has ever happened in the state than my service to the God. For I do nothing but go about persuading you all, old and young alike, not to take thought for your persons or your properties, but first and chiefly to care about the greatest improvement of the soul. I tell you that virtue is not given by money, but that from virtue comes money and every other good of man public as well as private. This is my teaching and if this is the doctrine which corrupts the youth I am a mischievous person. But if any one says that this is not my teaching, he is speaking an untruth. Wherefore, O men of Athens, I say to you, do as Anytus bids or not as Anytus bids, and either acquit me or not; but whichever you do, understand that I shall never alter my ways, not even if I have to die many times."

In the matter of dealing with criminals Plato adopts the same principle as he does in connection with deformed infants and chronic invalids. Even in the *Statesman* (IV. page 515) he gives expression to the idea that "Those who have no share of manliness and temperance, or any other virtuous inclination, and from the necessity of an evil nature, are violently carried away to godlessness and insolence and injustice, royal science gets rid of them by death and exile, and punishes them with the greatest disgraces." The same idea recurs in the *Laws* but is expressed in a loftier tone: (V. page 113): "The unrighteous and vicious are always to be pitied in any case and one can afford to forgive as well as pity him, who is curable, and refrain

and calm one's anger, not getting into a passion like a woman and nursing ill-feeling. But upon him who is incapable of reformation and wholly evil, the vials of our wrath should be poured out; wherefore I say that good men ought, when occasion demands, to be both gentle and passionate." He does not wish to visit the sins of the fathers on the children, except in the case of those "whose father, grand-father and great-grand-father have successively undergone the penalty of death." (V. 238-9)

If the foundations of the Platonic state have been truly laid, it is clear that the question of criminals cannot be so acute as it is in modern society. But here again one cannot but be struck by the essential reasonableness of Plato. He wages no vindictive war against criminals as such, as unfortunately so many of our magistrates tend to do, but he draws a fundamental distinction between those who are curable and those who are hopelessly addicted to crime. The former he would even forgive under certain circumstances. But for the latter he has no sympathy and would gladly exterminate them either by death or expulsion. He has no particular liking for capital punishment, and reserves it for the incurable wrongs only. He thought it the most effectual method of putting a stop to the propagation of a wicked stock, a desideratum which modern eugenics wholeheartedly accepts but seeks to attain the same end by the more benign method of "Rentoul's operation."

Eugenics is a modern term, but the justification of its use in connection with Platonism must have been already seen, and can be seen yet more clearly when a discussion of the principles of modern eugenics will have made it clear how all its most important suggestions were anticipated by Plato. Eugenics is yet a science of aspirations rather than of settled facts. But signs are not wanting to show how the future will vindicate his eugenic speculations, as the past has already proved his foresight in the matter of politics and feminism. The invigorating touch of his philosophy does not begin and end in futile speculations, "the idle song of an empty day." It essentially lies in its titanic power to make man think and face problems instead of passing them with a vague shrug of the shoulders. The vision of the great Grecian poet-philosopher is already coming within the purview of humanity and whether the ultimate battle between the forces of nature and of nurture is won in the interests of nature or of nurture, the worth of Plato's work in either direction will always be a challenge to the sluggard in thought, always an inspiration to him who has the courage to think.

\* There is one particular respect in which Plato's criticism of the eugenics of Sparta is of an abiding interest. Selective breeding in the case of animals has proved a conspicuous success, because selection in their case has always centred round some one definite characteristic, *e.g.* speed in a race horse, the woolliness of sheep or a particular kind of legs and so forth. Spartan eugenics too succeeded because it concentrated its strength merely on the bones and muscles of human beings. As a consequence Spartans were assuredly a strong virile race of men, but in no department of intellectual achievement have they left their mark. Plato saw through this weakness and he was dissatisfied with it. He aimed at uniting the physical vigour of the Spartan with the intellectual fineness of the Athenian. He aimed at inter-mingling the warp of strength with the woof of brains and by this very desire he transcended the simplicity of animal breeding. For nothing in the world is so exquisitely complex as the intellect of man. It is the common source of all knowledge but the richness of knowledge passeth the comprehension of words. The manifold diversities of intellect do not lend themselves to an easy segregation, and hence render eugenic efforts immeasurably difficult. Plato was awake to these difficulties but had not the wherewithal to overcome them. Eugenics practically slumbered till in a happy hour the world was enriched by Darwin's *Origin of the Species*. Evolution has furnished a key to heredity, and modern eugenics is struggling to fathom the secret of heredity. In an enhanced knowledge of life and the possibility of its practical application lies the promise of successful eugenics. Only then will the seeds scattered broadcast by Plato fructify in due course of time. Already they have had to wait long. He who in the centuries to come will solve the problem of human heredity will have also solved the problem of human destiny.

A. R. WADIA.

## FROM HUME TO GREEN (VII.)

### CARLYLE AND THE CONDITION OF ENGLAND QUESTION.

WITH the passing of the Reform Act of 1832 began the reign of liberalism. (Dicey). The new parliament carried out a series of beneficent and much needed reforms. It, however, failed to grapple with the social question. Pauperism was growing to appalling dimensions. The Corn Laws continued to press hardly on the poor. The New Poor Law by its drastic severity treated the pauper almost as a criminal and for the time being intensified the sufferings of the poor. And a series of state trials for sedition and conspiracy revealed the wide-spread discontent of the labouring classes and the unsympathetic attitude of government towards labour. In March 1834, six Dorchester labourers were convicted for the mere act of administering an oath at a trade union ceremony and sentenced to seven year's transportation and the barbarous sentence was upheld by Government. (S. and B. Webb, *Hist ry of Trade Unionism*.) No wonder that the working classes regarded the Reform Act and Dorchester Labourer's case as cause and effect; the middle classes were using their newly acquired political supremacy to further their own economic interests. Chartism (1838-39), in its essence, a social movement, represented the revolt of the working classes against the ascendancy of the middle classes.

As a matter of fact, the reformed parliament was as Dicey has shown, under the guidance of leaders who were dominated by the utilitarian creed with its fundamental doctrine of *laissez faire*. The object of legislation was the removal of all those restrictions which hampered the free action of the individual. The state could do no more. The utilitarian doctrine as embodied in its political economy, with its watch words of free competition and the sanctity of contract gave a convenient sanction for the ruthless exploitation of the working classes by the capitalist class. Writing in 1845, Disraeli says "since the passing of the Reform Act the altar of Mammon has blazed with triple worship. To acquire, to accumulate, to plunder each other by virtue of philosophic phrases, to propose a Utopia to consist only of wealth and toil, this has been the breathless business of enfranchised England for the last twelve years, until we are startled from our voracious strife by the wail of intolerable serfage." (Sybil, Bk. I. Ch. 5.) And Disraeli was not the only man of genius who was impressed with these social evils. At a time when Benthamism was at the height of its influence, there were

not wanting thinkers who while convinced of the need for through-going reform, denied the moral authority of individualism and denounced the dogma of *laissez faire*. Dicey refers to three of these thinkers, Southey, Arnold and Carlyle. But the greatest of them is undoubtedly Carlyle. More than any other writer he "expressed that disgust at the mean achievements of what we call civilization, that generous wrath at the arbitrary limitation of its advantages, that deep craving for a better order of social life, which is the source of so many of the most important social and political movements of the present day." (Caird.)

According to Carlyle, all false action is the result of false speculation and the root of the mischief in contemporary thought lay in the fact that it was dominated by the mechanical view of things. "Were we required to characterize this age of ours by any single epithet," he says, in one of his early essays, "we should be tempted to call it, not an heroic, devotional, philosophical, or moral age, but above all others the mechanical age." (Signs of the Times.) Education which pre-eminently requires a study of individual aptitude and a perpetual variation of means and methods, was to be conducted in the gross by mechanical methods. Government is a tax-gathering machinery and assumes in its members a keen eye and appetite for self-interest and requires no virtue such as love of country. Religion again which, properly speaking, "should be a thousand-voiced psalm, from the heart of man to his Invisible Father, the fountain of all goodness, beauty and truth and revealed in every revelation of these:" is in essence a prudential feeling, exchanging a smaller quantity of enjoyment in this world for a larger quantity in the other world. The consequences of this extension of the mechanical view to the life of man were disastrous. All idea of social unity was lost; *laissez faire* became the sole policy of government and cash payment the sole tie in the economic sphere. And the inevitable result followed, viz. anarchy, misery and revolt. "Rightly viewed," says Carlyle, "there is a science of dynamics in man's fortunes and nature, as well as of mechanics. The former treats of the mysterious springs of love and fear and wonder, of enthusiasm, poetry, and religion; the latter deals with the immediate motives, such as hopes of reward or of fear of punishment. The true ordering of life requires the right co-ordination of these two elements. Undue cultivation of the inward or dynamical province leads to idle, visionary and impracticable courses, while the undue cultivation of the outward or mechanical will destroy moral force which is ultimately the true basis of society."

For those who have learnt the lesson of *Sartor Resartus* this visible universe is the manifestation of a spiritual principle "All visible

things are emblems, what thou seest is not there on its own account; strictly taken, it is not there at all. Matter exists only spiritually and to represent some idea and body it forth." "We sit as in a boundless phantasmagoria and dream-grotto; boundless, for the faintest star, the remotest century, lies not even nearer the verge thereof: sounds and many coloured visions flit round our sense, but him, the Unslumbering, whose work both dream and dreamer are, we see not, except in rare half waking moments, suspect not."

The spiritual principle reveals itself in a still higher degree in man. "Where else is God's presence manifested not to our eyes only, but to our hearts, as in our fellowman?" It is this presence of the spiritual principle within him that makes man capable of knowledge, morality and religion. To Carlyle as to Newman, his own nature was a revelation. "The evidence of God," he said towards the last days of his life, "is the feeling I have deep down in the very bottom of my heart of right and truth and justice." The chief end of man here is not happiness. "There is in man a higher than love of happiness; he can do without happiness and instead thereof find blessedness!" Was it not to preach forth this same higher that sages and martyrs, the poet and the priest, in all times, have spoken and suffered; bearing testimony, through life and through death, of the God-like that is in man, and how in the God-like only has he strength and freedom?" (*Sartor Resartus*). Carlyle rejects with vehemence the utilitarian doctrine that men always desire pleasure. It is a calumny on men, he says in his lectures on heroes, that men are roused to heroic action by ease, hope of pleasure, or recompense of any kind. "It is not to taste sweet things; but to do noble and true things and vindicate himself under God's Heaven as a God-made man that the poorest son of Adam dimly longs. Show him the way of doing that, the dullest day-drudge kindles into a hero." It is only in the school of adversity that a man's nobleness is manifested. *The Divine Comedy* of Dante was written at a time when sorrow had become the portion and the condition of his life; but for his sorrows the world would have wanted one of its most remarkable books. At the same time a man does not need to make a sour face about things and refuse to enjoy wisely what his Maker has given him. "You should always look to the *heilig*, which means holy as well as healthy. And that old etymology, what a lesson it is against certain gloomy, austere, ascetic people who have gone about as if this world were all a dismal prison-house." What Carlyle insists upon is disinterested performance of work. "A man is born to expend every particle of strength that God has given him in, doing the work he finds he is fit for." He

ridicules the very idea of reward. "My friends," he says, "I think you are much mistaken about Paradise! No Paradise for anybody." The only reward we should expect is that we have got the work done, or at least that we have tried to do it. Goodness is a rule to itself and has no need of sanctions. Even art itself is to be loved not because of its effects, or because it gives pleasure, but because it reveals the soul of all true beauty. The spiritual principle again manifests itself in society, for every society is the embodiment, more or less complete, of an idea. At bottom this idea is the idea of loyalty, be it devotion to a man, class of men, a creed, or an institution. It has in it a religious character. "It is properly the soul of the state, its life; mysterious as other forms of life, and like these working secretly, and in a depth behind that of consciousness." (Characteristics).

Lastly, the spiritual principle manifests itself in history in the form of justice which executes itself upon men and nations. To Carlyle all history is a Bible and the aim of all his historical works is to vindicate the ways of God to man. "He is always trying to penetrate beneath the facts to the ultimate moral forces upon the strength of which he believes the conflict to turn and to show that in spite of all appearance to the contrary the soul of the world is just." (Caird). Carlyle was convinced that the permanent well-being of a nation depends not on its material resources but on the moral qualities of courage, purity of family life, integrity in public life, truthfulness and above all justice. His historical works are penetrated with this teaching. His French Revolution is one long sermon on the text that as nations sow so shall they reap. A mass of wickedness, falsehood and oppression of class by class had been slowly accumulating till at length heaven and earth grew weary of it and the settlement came in the shape of final explosion and the reign of terror. Carlyle has often been taunted that he advocated the doctrine that might is right. But what he really taught was that right is might and that in the long run it is right alone that conquers. The Christian religion, so far as might was concerned was the weakest in its origins, and yet it proved to be the strongest force in the world. "Await the issue," he says, "in all battles if you await the issue, each fighter has prospered according to his right. His very death is no victory over him. He dies but his work lives after him. A heroic Wallace, quartered on the scaffold cannot hinder that his Scotland become one day, a part of England, but he does hinder that it becomes a part of it on unfair terms." (Past and Present Bk. I. Ch. II).

It is no wonder that the great prophet of duty and justice found it difficult to tolerate a society which rested on the gospel of non-interference and which allowed the richer classes to prey on the poorer classes



under the shelter of phrases like free contract and rights of the individual. Further Carlyle had an exceptionally keen eye for social wrongs and by personal experience he had made himself familiar with the struggles and sorrows of the poor. "Wealth has accumulated itself into masses; and poverty, also in accumulation enough, lies impassably separated from it—opposed, uncommunicating, like forces in positive and negative poles. The gods of this lower world sit aloft on glittering thrones, less happy than Epicurus's gods, but as indolent as impotent, while boundless living chaos of ignorance and hunger welters terrific, in its dark fury, under their feet . . . sad to look upon; in the highest civilization, nine-tenths of mankind have to struggle in the lowest battle of savage or even animal man, the battle against famine." (Characteristics.) What made the whole situation intolerable to Carlyle was the thought that the multitude of workers were deprived of all share in the wealth which their toil had produced. Hence his vehement denunciation of the gospel of *laissez faire*. "What a shallow delusion," he says, "is this we have all got into, that any man should or can keep himself apart from men; have no business with them except a cash-account business. We are all bound together, for mutual good or else for mutual misery, as living, nerves in the same body." Hence his insistence on the wider extension of the functions of the state. The 'insane' Corn Laws must go. The state should provide healthy surroundings for the labourers by the enforcement of sanitary regulations and by the appointment of inspectors to inspect factories and mines. State aid on a long scale should be given to emigration. The state should further secure to the labourer a fair day's wages for a fair day's work. "The progress of human society consists even in this same, the better and better apportioning of wages to work." Carlyle's analysis of what constitutes the well-being of a labourer is so admirable that it is worth quoting in full. "What constitutes the well-being of a man? Many things; of which the wages he gets and the bread he buys with them are but one preliminary item. Grant, however, that the wages were the whole; that once knowing the wages and the price of bread, we know all; then what are the wages? Statistics inquiry, in its present unguided condition, cannot tell. The average rate of day's wages is not correctly ascertained for any portion of this country, not only not for half-centuries, it is not even ascertained anywhere for decades or years: far from instituting comparisons with the past, the present itself is unknown to us. And then, given the average of wages, what is the constancy of employment; what is the difficulty of finding employment; the fluctuation from season to season, from year to year? Is it constant,

calculable wages; or fluctuating, incalculable, more or less of the nature of gambling? This secondary circumstance, of quality in wages, is perhaps even more important than the primary one of quantity. Further we ask, can the labourer, by thrift and industry, hope to rise to mastership; or is such hope cut off from him? How is he related to his employer; by bonds of friendliness and mutual help, or by hostility, opposition, and chains of mutual necessity alone?" (Chartism, Ch. II.)

Above all, it is one of the primary duties of the state to provide universal education for its subjects. Heavier wrong is not done under the sun than to deny education to the poor. "It is not because of his toils that I lament for the poor. . . . But what I do mourn over is, that the lamp of his soul should go out. . . . That there should one man die ignorant who had capacity for knowledge, this I call a tragedy." (Sartor Resartus.) Further "The twenty-four million labouring men, if their affairs remain unregulated, chaotic, will burn ricks and mills; reduce us, themselves and the world into ashes and ruin." (Chartism Ch. X.) It should be remembered that in recommending these measures Carlyle was far in advance of his time. The first Public Health Act was passed in 1848 and it was not until 1870 that it was recognized that it was the duty of the state to provide for national education.

Government, however, cannot do everything. The main problem of the organization of labour, the problem of problems, will have to be solved by the masters and workers acting together in a spirit of harmony and co operation. "The true wealth of a man is the number of things which he loves and blesses, which he is loved and blessed by!" Hence the insensate pursuit of wealth should cease. Not cheaper production but fairer distribution should become the guiding principle. Love of men cannot be bought by cash payment. Hitherto capital was the tyrant of labour, it should now become its friend by making the principle of permanent contract the basis of all business relations. And Carlyle did not hesitate to prophesy that the time will come when the employer will find it to his interest to grant to his workers a permanent interest in his business concern so that it becomes, "in practical result, what in essential fact and justice it ever is, a joint enterprise." (Past and Present Bk. IV. Ch. 5.)

It is not a little curious that Carlyle while he commends the participation of the labouring classes in business concerns, was throughout his life opposed to the participation of the people in government. A democratic form of government in all its shapes was hateful to him and he never concealed his contempt for the franchise, ballot and other constitutional

machinery. He wrote at a time when the working classes had little opportunity for civic work or even for organized effort and it is no wonder that he had no faith in their political capacity. Further, to Carlyle the whole universe was a hierarchy and, as it is well known, hero worship was the essence of his religious and social creed. He gives expression to this creed in a famous passage in his essay on Boswell's Life of Johnson where mankind is compared to a flock of sheep. "Sheep go in flocks for three reasons: first, because they are of a gregarious temper, and love to be together: secondly, because of their cowardice; they are afraid to be left alone: thirdly, because the common run of them are dull of sight, to a proverb, and can have no choice in roads; sheep can in fact see nothing; in a celestial luminary, and a scoured pewter tankard, would discern only that both dazzled them, and were of unspeakable glory. How like their fellow-creatures of the human species. Men too, as was from the first maintained here, are gregarious; then surely faint-hearted enough, trembling to be left by themselves; above all, dull-sighted, down to the verge of utter blindness. . . . Thus do men and sheep play their parts on this nether earth; wandering restlessly in large masses, they know not whither: for the most part, each following his neighbour, and his own nose."

Nevertheless, not always, look better, you shall find certain that do, in some small degree, know whither. Sheep have their bell-wether; some ram of the folds, endued with more valour, with clearer vision than other sheep; he leads them through the wolds, by height and hollow, to the woods and water-courses, for covert or for pleasant provender; courageously marching and if need be leaping, and with hoof and horn doing battle, in the van: him they courageously and with assured heart follow. . . .

Now if sheep always, how much more must men always, have their chief, their guide! Man too is by nature quite thoroughly gregarious: nay ever he struggles to be something more, to be social; not even when society has become impossible, does that deep-seated tendency and effort forsake him . . . . Amid those dull millions, who, as a dull flock, roll hither and thither, whithersoever they are led; and seem all sightless and slavish, accomplishing, attempting little save what the animal instinct in its somewhat higher kind might teach. To keep themselves and their young ones alive,—are scattered here and there superior natures, whose eye is not destitute of free vision, nor their heart of free volition. . . . These are properly our men, our great men; the guides of the dull host—which follows them as by an irrevocable decree. They are the chosen of the world:

they had this rare faculty not only of 'supposing' and 'inclining to think,' but of knowing and believing; the nature of their being was that they lived not by hearsay, but by clear vision; while others hovered and swam along, in the grand Vanity-fair of the world, blinded by the more shows of things, these saw into the things themselves, and could walk as men having an eternal loadstar, and with their feet on sure paths."

It follows "that hero worship is the soul of all social business among men; the doing of it ill, or the doing of it well, measures exactly what degree of well-being or ill-being is in the world's affairs." (Past and Present Bk. I. Ch. VI). And Carlyle is convinced that democracy can never be safely trusted to select its heroes.

At the same time it should be remembered that Carlyle recognized that democracy has come to stay and has to be reckoned with. The brass collar method which served well enough during the feudal times has now disappeared and hero worship cannot be forced on the people. It must be willing and spontaneous. The problem is how to reconcile inevitable democracy with indispensable sovereignty.

There is yet another qualification to be noted. Though critics of democracy like Maine try hard to persuade us that democracy is a form of government, it is something more than that. In its essence it is a spiritual movement resting on the inalienable rights of the human personality. And Carlyle though he has not hesitated to say hard things about democratic methods of government, has rendered splendid service to the democratic spirit, for all his writings are one long sermon on the rights and worth of the individual. All ranks, dignities and institutions are so many clothes for the human spirit.

It is the glory of Carlyle that he at a time when the state was confined to its police function, did much to revive the old Platonic idea that the state has a social and ethical work to perform. He failed to recognize, as Caird points out, that it is an idea which could be scarcely realized in modern times by any government without a strong democratic force behind. His services, however, remain. In the words of the great Scottish teacher, "After everything has been said that can be said by way of criticism we are forced to recognize that no English writer in this century has done more to elevate and purify our ideals of life, and to make us conscious that the things of the spirit are real and that, in the last resort, there is no other reality." (Caird)

## THE NATURE OF COMEDY (II.).

THE most radical difference in the sphere of comedy is between the characteristically Shakespearean type, which is called "romantic comedy," and that realistic type which is exemplified, in various forms, attitudes and methods, by Roman comedy, by Ben Jonson's comedy of humours, by Molière's comedy of character, and by the Restoration comedy of manners—thus roughly to describe them. Shakespearean comedy has no special relation to contemporary life, or, indeed, to any particular place or time. Places are mentioned, and there is an occasional dash of local colour, but this place element is very slight and is not really a part of the dramatic conception. The place and time are our own, yet far away; the people ourselves and our neighbours, yet equally the friends and neighbours of all others everywhere. Thus to all they are both near and strange. Their humanity is altogether convincing, yet there is something remote about them, for an idealising process has been at work raising them above those local and temporal characteristics without which no one can seem very familiar to us. The effect produced by this atmosphere is that we become somewhat careless of probability in incident. In realistic comedy the standard of probability is that of the actual world, but in Shakespeare it is not, at its severest, so severe as this, and as we recede from actuality of circumstance and reach the region of *The Tempest* and that of *A Midsummer Night's Dream*, we become more and more credulous. Yet we are never deceived. There is no falsity as to human nature, and natures that are not human are portrayed with such fitness and consistency as are truth in that sphere.

Secondly, there is, in general, no satiric purpose in the comedies of Shakespeare. Comedy, of course, makes such an admirable stalking horse for the cover of the satirist as he shoots that Shakespeare could not but use it thus occasionally; but such satire is incidental, and gives the impression not of reforming design but simply of irresistible mirth. There is never any cynicism on the dramatist's part, and cynical characters are laughed at. Shakespeare's comedies are written in praise, not in dispraise, of life. The dictum of Aristotle that, while in tragedy men are represented as nobler than they are, in comedy they are represented as worse is far from applying to Shakespearean comedy, which presents people of fine temper and large nature. Even the comparatively unworthy are not presented as destitute of worthiness, and their faults rouse indulgent laughter rather than scorn. Shakespeare has here

no didactic purpose whatever, and is impelled by mere delight in all phases of human nature except vicious elements, which, when they appear at all in his comedies, are studiously kept unemphasised or yield to reformation. Shakespeare's delight in humanity is the root of the matter. He is full of curiosity about men, and regards all sorts and classes of them with a far more than tolerant sympathy. He cannot stand aloof from his people, cannot point at them to condemn them. In realistic, satirically-purposed drama there must be either hostility or cold detachment: in this atmosphere of friendliness satire could never thrive. Mr. John Palmer remarks that Shakespeare's inability to take a purely intellectual view of human nature and conduct, to keep his feelings, his sympathy, out of his judgment, is characteristically English. But if this be so Ben Jonson and the Restoration writers of English comedy were peculiarly un-English in this regard.

A love-story is the fittest theme for comedy, and frequently supplies the plot even when the main interest is satirical or lies in complexity of incident. In Shakespearean comedy, naturally, the love-interest is almost always paramount.

Ben Jonson's humour comedies belong to the hard, intellectual satiric kind, though they possess a certain breadth of comic effect which almost stands for sympathy. These comedies are distinct from Molière's in that the persons are less individual, being merely stage-types, and are submitted to almost farcical exaggeration. The humour makes the man; it is not modified by the rest of him, but colours his whole being, and speaks and acts by means of this automaton. When in the end it leads to disaster of the mild, comedy kind, we think of a balked and discredited humour, by no means of a man, suffering and mending. There are exceptions, but in general Ben Jonson's characters cannot change: they are cast once for all and are fully and finally revealed at the very beginning. Once seen they are completely known, a single speech or act suffices as epitome, and further speeches and actions simply exhibit the same quality in different circumstances, providing varied amusing situations and repetition of satiric emphasis. What a breadth of difference there is between such characterisation and Shakespeare's! It is all a matter of sympathy. To the Jonsonian view men are good or bad, wise or fools, the great majority being fools if not villains. The complexity of human nature and the extraordinary variety of its combination were hidden from Ben Jonson. Very many aspects of humanity were so alien from him that he despised them: he was the very last to be able to discern the soul of goodness in the apparently evil or foolish man. Hence his satiric temper and purpose, and hence also a method of characterisation that

exactly suited this purpose, abstracting one quality from all others, revealing it in all sorts of circumstances, emphasising its absurdity again and again.

One result of the combined abstraction and exaggeration of Ben Jonson's method is a sense of unreality which makes the satire less painful. Just as tragedy moves fear, according to Aristotle, by showing us the terrible experiences of *men like ourselves*, so comedy can apply its pungent satiric corrective to the consciousness of the spectators only in so far as they recognise their kinship with the satirised person on the stage. Thus by Ben Jonson's method satire, while losing some of its power, loses some of its grimness also, and the plays are pleasanter to see or read, and perhaps more truly comedies, than those whose satiric pictures are more realistic. The effect is further lightened by the fun of the exaggeration.

The plays represent Ben Jonson's London: there is a very large amount of local detail in references both to districts, streets, and so on, and to customs. Such a limitation detracts from permanent value, yet adds vividness so long as allusions remain intelligible; and at any rate there is nothing local in the *characterisation* in spite of its local setting.

J. C. ROLLO.

(To be continued.)

## THE THEORY OF ELECTRONS, AND ITS APPLICATION TO THE INTERPRETATION OF PHYSICAL AND CHEMICAL PHENOMENA (I.)

*Introduction*—The most notable achievements in the domain of physical science have been brought about by the successful application of the ideas of *ether*, *energy* and *electron* to the interpretation of physical phenomena. The various branches of physics have been co-ordinated together in a most wonderful manner, and in some aspects the sister-science of chemistry has joined forces in capturing the secrets of Nature. The developments in the department of Electro magnetism have been so varied, so many and of such far-reaching importance, that they have revolutionised social, industrial and political life.

Perhaps the most important discovery of the early nineteenth century was the principle of the conservation of energy, amongst the ablest exponents of which were Joule, Thomson and Helmholtz. This principle served to co ordinate the several branches of physics which dealt with energy in its different forms : namely, Mechanics, Heat, Electricity and Sound. Taken in conjunction with the principle of the degradation of energy better known as the principle of maximum entropy this principle forms the foundation of the science of Thermodynamics which has led to the development and perfection of steam-engines and the use of steam as motive power.

In the latter half of the century scientists were busy investigating the nature and functions of the hypothetical medium which played so large and important a part in optical and electro-magnetic phenomena. The brilliant experimental researches of Faraday, noted for his pre-eminently practical bent of mind ; the bold and almost bizarre theoretical speculations of Maxwell, far in advance of his times ; the epoch-making discovery by Hertz of the electro-magnetic waves predicted by Maxwell, and their harnessing by Marconi for the service of man, tending to the annihilation of time and distance,—these were merely stages in that synthetic process which has welded together Electricity, Magnetism and Light into one organic whole. Only gravitation eluded all efforts at co-ordination. In attempting to explain gravitation also as a manifestation of ether, the attention of scientists became all absorbed in “ that superlatively grand question ”—the connection between ether and matter, and “ the inner mechanism of the atom.” The last decade of the nineteenth century witnessed the discovery and confirmation of



the atomic nature of electricity, while the electronic structure of the atom, has been established beyond doubt by the magnificent researches of the last twenty years. Meanwhile Einstein has wonderfully succeeded in bringing gravitation also into the fold. The Theory of Relativity has revolutionised men's ideas about time and space, and transformed the foundations of physical science. Most wonderful of all, the phenomenal discoveries of Radio-activity, have brilliantly confirmed the most extravagant deduction from Einstein's theory,—the identity of mass and energy. Strangely enough, Relativity and Radio-activity have combined together and opened up new vistas of untold possibilities, if once the energy of atomic disintegration can be controlled and directed by man. The researches of J. C. Bose have succeeded in establishing the kinship between animate and inanimate matter. All the sciences are thus striving to bring about universal harmony.

*The Discovery of the Electron.*—The first suggestions about the atomic nature of electricity are to be found in Faraday's laws of electrolysis. The products of decomposition of an electrolyte when a current passes through it, are proportional in the first instance to the total quantity of electricity that has passed through it, and in the second instance to their chemical equivalent weights. Hence the charge carried by an ion should be proportional to its chemical valency. An ion of a bivalent element bears twice as much charge as an ion of a monovalent element. In other words, the electrical charge on the ion of any element must be an integral multiple of the charge carried by the hydrogen ion. We are thus led to infer that electricity is capable of existing in parcels of constant magnitude. Since the hydrogen ion taking part in electrolysis is assumed to be simply a hydrogen atom bearing a positive charge, the natural unit of electricity must be at least equal in magnitude (if not a sub-multiple) to the charge on the hydrogen atom. It was half a century later that this suggestion was taken up in earnest by Johnstone Stoney who named this fundamental unit of electricity, *the electron*. The pioneer experiments of J. J. Thomson, Crookes, and others established beyond doubt the existence of an atom of electricity. It was shown that the smallest quantity of electricity that took part in electric discharges through rarefied gases, was of the same magnitude as the charge on the hydrogen ion in the electrolysis of water but negative in character. The term *electron* is now used to denote this—the free atoms of negative electricity. J. J. Thomson proved that the cathode rays shot out from the cathode in a Crooke's vacuum tube were particles of negative electricity travelling inside it with a velocity as high as one-tenth of the velocity of light, and that the mass and charge in

## THE THEORY OF ELECTRONS

the particles were independent of the nature of the gas in the vacuum tube. The mass of the electron was shown to be about  $1/1850$ th part of the mass of the hydrogen atom, and the charge on it has been shown by Millikan to be  $1.591 \times 10^{-20}$  electro-magnetic units, expressed in grams, the mass of the electrons is  $0.900 \times 10^{-27}$  gms. and its size is  $1 \times 10^{-13}$  cms. The ratio  $e/m$  (where  $e$  = charge on the electron, and  $m$  = mass), or what may be called the electro-chemical equivalent of the fundamental unit of electricity was determined by J. J. Thomson and others in a number of ways. In the absence of other electric or magnetic fields, the cathode rays in a vacuum tube travel in straight lines, and their direction is determined by the luminous patch on a phosphorescent screen. If the rays are made to pass through a transverse magnetic field the rays are bent out of their linear course as shown by the shift of the patch on the screen. But if during the time the rays are passing through the magnetic field, they are simultaneously subjected to the action of an electric field perpendicular to the magnetic field and so directed and adjusted as to neutralise the bending produced, the rays will continue their original undeviated course. By equating the expressions for the deviations produced by the two fields acting singly, the value of the ratio  $e/m$  is obtained in terms of quantities easily and accurately measured. If  $v$  is the velocity of the electron or an electrical corpuscle, and  $r$  the radius of the curved path into which the course of the corpuscle is deviated by the magnetic field of strength  $H$ , then it readily follows  $\frac{m v^2}{r} = Hev$  or  $(m v/e) = H r$ . Further, if  $V$  is the strength of the electric field which just neutralises the magnetic deviation, then  $eV = Hev$ ; or  $v = V/H$ . Then substituting this value of  $v$  in the previous expression, we get  $e/m = V/H^2 r$ .  $V$ ,  $r$  and  $H$  can be easily calculated. This method of cross-fields has been largely employed in evaluating the ratio  $e/m$  for the  $\alpha$ -rays and  $\beta$ -rays emitted by Radio-active substances. Two other methods involving similar devices were employed by J. J. Thomson. The cathode rays, after being deviated by a magnet were made to impinge on one junction of a thermal couple placed in series with a sensitive galvanometer. The rise in temperature per second of the junction due to the bombardment by the rays as measured by the thermo-electric current produced afforded a means of calculating the energy of the electrons impinging per second, on the junction. Another expression was obtained by evaluating the total electric charge imparted by the corpuscles to the cup containing the thermal couple,

in terms of the rate of change of potential in a quadrant electrometer connected with the cup. Connecting these expressions with the deviation of the magnetic field, Thomson arrived at a value for  $e/m$ , of the same order as by the other method. In the third method, Thomson utilised the property of a negatively charged surface of zinc in emitting electrons. By adjusting the strength of a transverse magnetic field, he made the electrons return to the zinc plate after describing a cycloid. The maximum range of travel of the electrons in a direction at right angles to the zinc surface, was thus equal to the radius of the rolling circle generating the cycloid. This distance was determined by the limiting position of a parallel plate connected with an electrometer. In the absence of the field the electrons impinge on the parallel plate and charge it. When the field is on, and the limiting position has been reached, the deflection in the electrometer decreases suddenly and appreciably. These methods have been reviewed in detail, because they or modifications of them, have been employed by Rutherford, Thomson, Aston and others in investigations into the electronic constitution of the atoms.

Returning to the ratio  $e/m$  for the electron, if  $e$  can be determined,  $m$  is easily known. Thomson employed for this purpose the discovery by C. T. R. Wilson that if supersaturated dust-free air be allowed to expand suddenly and adiabatically, condensation takes place on the ions present in the air, due to the action of a radio-active substance like radium. The drops so formed fall through the gas at a constant rate from which their size and mass can be calculated. Millikan employed the ingenious device of balancing the weight of an isolated drop by an electric field, and then allowing it to fall and thus determining its mass, from its size, by noting the rate of fall of the drop. By equating the expression for the electric force on the drop to its weight, he calculated the value of  $e$  which came out to be multiples of  $1.51 \times 10^{-20}$  electro-magnetic units.

When once the existence of the free atom of negative electricity had been established, the attention of scientists was drawn to "the inner mechanism of the atom." The phenomena of atomic disintegration of radio-active substances, the formation of gaseous ions by ionising agencies such as X-rays,  $\beta$ -rays and  $\gamma$ -rays, and the expulsion of electrons from negatively electrified surfaces by strong heating as in a Coolidge bulb, or by the incidence of ultra-violet light, all pointed towards an electrical structure for the atoms of all substances. Recent researches have established that an atom must be pictured to be built up of a

## THE THEORY OF ELECTRONS

central nucleus of positive electricity surrounded by one or more electrons according to "the atomic number" of the element. These electrons which surround the nucleus are to be considered as arranged in groups and sub-groups moving in definite orbits, and held together against their mutual repulsions by the strong attraction of the central nucleus. The transmutation of the elements studied under Radio-activity is described as due to the disintegration of the nuclei of atoms, while the spectra of elements are supposed to have their origin in the radiations emitted whenever an electron in the atom changes from one group or orbit to another. Though the nucleus itself is a complex structure containing one or more "protons" (the proton being the nucleus of the hydrogen atom, and the natural unit of positive electricity) cemented together by electrons, yet the ordinary physical and chemical properties of the element depend on the number and distribution of the outer electrons. The attraction and control of the positive nucleus on the outermost layer of electrons must be naturally feeble, and in some cases more than balanced by the repulsion of neighbours, especially in the case of metals of high atomic weight and number, which hence must be assumed to contain a large number of electrons surrounding the nucleus. Consequently some of the outermost electrons will be but loosely attached to the atom, and can be easily disgorged. We may therefore expect in metals a number of free electrons which have been detached from the parent atoms. Some of the electrons in the course of their wanderings in the inter-spaces between the atoms, may attach themselves to other atoms which become thereby electronegative in character. Atoms which have lost one or more electrons by detachment are electro-positive in character and constitute positive ions, while atoms that have gained electrons behave as negative ions. Thus in the interior of a mass of metal, there will be present, in addition to neutral atoms, positive ions, and negative ions and free electrons, roaming about. The mean kinetic energy of a free electron is assumed to be equal to the mean kinetic energy of a molecule of the substance. Thus the free electrons are in thermal equilibrium with the molecules.

It is on these free electrons during their intervals of freedom that electric forces are supposed to act to produce a current which therefore consists of a stream of electrons moving in the direction of the external or applied electro-motive force. The electrons thus set in motion acquire additional kinetic energy, some or all of which they transfer to the molecules against which they bombard in the course of their journey. The molecules thus reinforced will impart a portion of the additional energy to other electrons which bombard against them. The increased kinetic

energy of the molecules manifests itself as heat in the conductor, while the transfer of electronic energy to the molecules gives rise to the phenomenon of electrical resistance. When a metallic conductor is at the same temperature throughout, the number of free electrons per unit volume must naturally be the same throughout. The larger the cross-section of a conductor of given length, the larger the area over which the electromotive force acts and the greater the number of electrons that can take part in the transmission of electrical energy as an electric current. Thus when the cross section is doubled, there are twice as many carriers available for conveying the current. Hence the conductivity of the conductor is doubled or its electrical resistance is halved. The resistance of a conductor will be inversely proportional to its cross-section. Again, the longer a conductor is, the greater the transfer of energy from the electrons to the molecules by increased frequency of collisions. In other words, the electrical resistance increases. Thus the resistance of a conductor of the same cross-section is proportional to its length.

Since the free electron in a metal behaves as if it were equivalent to a molecule, the free electrons ought to play as important a part in the transfer of heat as the molecules. Since the same agencies take part in both electrical and thermal conductivity, their ratios must be the same for all substances. This ratio was shown by Wiedemann and Franz to be almost a universal constant independent of the nature of the metal, but proportional to its absolute temperature.

*Electrolytes.*—Metals only get heated when they transmit an electric current; but electrolytes are decomposed by the current passing through them. An electrolyte consists of a solution of a substance in water or other solvent, or else a fused salt. It is believed that in a fused electrolyte or in an electrolytic solution, there are always present, as in the case of a metal, atoms or groups of atoms carrying electric charges. Since an electrolyte is electrically neutral *en masse*, there must be present, at any moment, equal numbers of positive and negative ions, or the total positive charge on the ions must equal the total negative charge. When an external electro-motive force is applied between the electrodes, the ions are set in motion. The positive ions or kations travel towards the kathode, while the negative ions or anions move towards the anode. Since the kations are atoms or atomic groups which have lost electrons, when they reach the kathode, they acquire electrons and become neutral. Similarly the anions, which are atoms or groups that have gained electrons, give up their electrons to the anode and become neutral. Thus the flow of a

current through an electrolyte is effected by a double procession of ions, the positive ions moving in the direction of the current, and the negative ions moving in the opposite direction. The total current through the electrolyte is the sum of the two, since the motion of a negative charge in the negative direction is equivalent to the motion of an equal positive charge in the positive direction. It is thus seen that in the case of electrolytes also the electrons, by means of their atomic carriers, move and constitute the current.

A simple voltaic cell consists of a plate of zinc and a plate of copper dipped apart in dilute sulphuric acid and connected together outside the acid by a metallic wire. As we have already seen, there will be present in the acid at any moment a number of positive hydrogen ions, and negative sulphate ions ( $\text{SO}_4$ ). These ions will be in dynamic equilibrium with themselves and the neutral molecules. Recombinations among these ions will be compensated for by the dissociation of fresh molecules. In the case of the zinc plate also, there will be present in it a number of positive and negative zinc ions. The densities of the ions in the two cases will be different. Consequently positive zinc ions will enter the acid leaving the plate negatively charged. The transfer of zinc ions into the acid will continue to take place until the potential gradient set up between the positively charged surface of acid and the negatively charged zinc surface prevents the further entry of ions into the acid. This difference of potential between the acid and the zinc is known as the contact electromotive force between the acid and the zinc. A similar phenomenon takes place at the surface of the copper plate. There also there is set up a potential gradient from the acid to the copper. Meanwhile the entry of positive zinc or copper ions into the solution results in a displacement of positive hydrogen ions. The density of the hydrions so displaced will be greater in the neighbourhood of the zinc plate than near the copper. Hence the hydrogen ions will move from the neighbourhood of the zinc plate towards the copper plate to equalise the osmotic pressure. When this equalisation has been brought about, since the acid will be at the same potential throughout, it is clear that the copper plate will be at a relatively higher potential than the zinc. This will bring about in its turn a transfer of electrons from the zinc plate to the copper plate through the conducting wire. The hydrogen ions will now acquire electrons from the copper plate and become neutral. Thus the whole process consists in (1) the displacement of hydrogen ions by the entry of zinc ions into the acid; (2) the diffusion of the positive hydrogen ions towards the copper plate; (3) a procession of electrons

from the zinc to the copper plate which is equivalent to a positive current from copper to zinc; (4) the neutralisation of the hydrogen ions. The same cycle of changes repeats itself, and a continuous positive current is maintained from the zinc plate through the acid to the copper plate, and a negative current from the zinc to the copper, through the connecting wire—or in other words a continuous current through the circuit.

It often happens, in practice, that the hydrogen ions do not immediately get neutralised at the copper plate. They form with it, as it were, a parallel plate condenser, and tend to choke the current by setting up an opposing electromotive force. This phenomenon which is known as polarisation may be avoided either by mechanically scrubbing off the layer of hydrogen as it forms, or getting rid of it by chemical combination. It may be noted, in passing, that on open circuit gas comes off entirely at the zinc plate, while on closed circuit gas is given off most copiously at the copper plate, and if the amalgamation or purity of the zinc plate be perfect, *entirely* at the copper plate.

Faraday's laws of electrolysis have been utilised to define the practical unit of current *the ampere*, which is one-tenth C. G. S. electromagnetic unit, as the current which deposits 0.011183 gms. of silver per second from a neutral solution in water of silver nitrate.

*Thermo-electric phenomena.*—The electronic theory has been useful also in the explanation of thermo-electric phenomena observed inside and at the junctions of metals. As already explained, the free electrons inside a metal behave exactly as the molecules themselves. Each electron has the same mean kinetic energy as a molecule and is in dynamical equilibrium with other electrons and molecules. It is therefore to be expected that the pressure of the electrons in the metal will be different with each metal and for the same metal will vary with the temperature. Hence at a junction of two metals, the pressure of the electrons will be different on either side of the surface of separation, and there will be a natural tendency for the transfer of electrons from the one metal to the other to bring about equalisation of pressure. Such a transfer of electrons, if it occurs, will show itself as a current. If a closed circuit be formed entirely of two metals, there will be at both junctions a tendency of transfer from the one metal to the other. But if the two junctions are at the same temperature, the tendencies for the transfer will be equal and opposite and will therefore balance each other. There will be no current through the circuit. On the other hand, if the two junctions are at two different temperatures, the pressures and the mean kinetic

## THE THEORY OF ELECTRONS

energy of the electrons at the two junctions will be different. The tendency for the transfer of electrons from the one metal to the other will be greater at the hot junction, and a current will flow through the circuit till the temperatures of the junctions have been made equal. This tendency for the transfer of electrons gives rise to an electro-motive force at the junction of two metals which is known as the Peltier E.M.F. The direction of the Peltier E.M.F. is usually defined as the direction in which a current will flow across the hot junction when the circuit is formed entirely of these two metals. It is clear that the introduction of a third metal into the circuit will not in any way alter the total E.M.F. in the circuit, provided the entire mass is of uniform temperature throughout which is the same as the temperature of the two metallic ends with which it is in contact.

The existence of an E.M.F. at the junction of two metals implies that if a current due to an external source be passed through such a junction, energy changes will occur in it. If the current be passed in the same direction as the Peltier E.M.F. the current will absorb energy from the junction, and the junction will naturally be cooled. But if the current flows in the opposite direction to the Peltier E.M.F. the junction will absorb energy from the current and will get warm. The energy absorbed or liberated at the junction will be proportional to the product of the current strength, the time of flow, and the value of the Peltier E.M.F. at the temperature of the junction. These heat-effects are known as the Peltier effects and are reversible as they depend only on the first power of the current.

*Thomson Effect.*—It is also easily conceivable that when a current flows through a conductor in which there exists a steep temperature gradient, owing to different temperatures obtaining at various points along the conductor, there will be a corresponding variation in electronic pressure at the several points. Consequently an E.M.F. may be expected to exist between two points along the conductor. Two points having the same difference of temperature will also have the same electro-motive force acting between them. When, therefore, a current is passed through such a conductor in which a steep temperature gradient is maintained, between any two points on the conductor there will be absorption of energy by the current or the conductor according as the current flows in consonance with or against the E.M.F. existing between the points. These reversible thermal effects have been called the Thomson Effect after their discoverer. The corresponding E.M.F. has been called the Thomson E.M.F. or "the specific heat of electricity." In the case of iron, heat is given out to the conductor when the current



flows up the temperature gradient, and the specific heat of electricity is therefore said to be negative, while in the case of copper, heat is given out to the conductor when the current flows down the temperature gradient, and the specific heat of electricity is said to be positive. In other words, the direction of Thomson E.M.F. is up the temperature gradient in the case of copper, and down the temperature slope in the case of iron. The direction of the Peltier E.M.F. is from copper to iron.

*Nemst and Ettinghausen Effect.*—It was found by Nemst and Ettinghausen, that, on maintaining a temperature gradient in a metal sheet, a potential difference was produced between the edges of the sheet, if a transverse magnetic field was present. This result is clear, if we remember that, owing to the temperature gradient, a flow of electrons must take place. Since the electrons thus set in motion along the temperature gradient are moving in a magnetic field, they will be deflected out of their course towards a side, where they will accumulate and increase the electronic pressure there. This increase on one side will manifest itself as a potential difference set up between the side edges of the sheet.

M. RAJA RAO.

(To be continued)

## INVESTIGATIONS ON THE OPTICAL PROPERTIES OF NON-LUMINOUS POTASSIUM VAPOUR.

IN view of the fact that there is a profound and intrinsic link between the optical and magneto-optical properties and the structure of the molecule of an element, a careful study of these properties, especially absorption, refraction, and dispersion of the vapours of the elements will be an important step towards the exploration of the intimate structure of the molecule. The researches summarised in this communication were therefore undertaken in the physical laboratories of the Maharaja's College, Vizianagram, with a view to study the above-said optical properties of non-luminous potassium vapour.

**Absorption.**—Absorption in the visible region was studied by means of a Hilger wave-length spectrometer. In the red channelled spectrum accompanying the first members of the principal series (1, s—2, P) the wave-lengths of 15 bands were measured all of which are clearly seen on the photograph. By means of a quartz spectrograph, absorption in the ultra-violet was studied by using vapour at a high density. With the vapour at about  $750^{\circ}$  C., the numbers of members of the principal series has been raised from the twenty-four previously known to thirty. At  $750^{\circ}$  C., a band made its appearance at 5,770 A. U. which with the rise of temperature gradually extended to the short wave-length end up to 5,340 A.U. At about  $950^{\circ}$  C., the pair 4,641 and 4,642, the first members of the combination series (1, s—3, d) was absorbed. And at the highest temperature used in these experiments, about  $1,100^{\circ}$  C., only the region from 5,350 to 4,800 A. U. was transparent and this was filled with a host of dark bands and lines some of which seemed to correspond to the subordinate series, thereby showing that this series could be obtained in absorption if the temperature of the vapour were sufficiently high which fact lends weight to Saha's theory of temperature radiation, as has been pointed out in a note in *Nature* August 19, 1922. The absorption of the combination pair (1, s—3, d) is considered very important as it is a direct negation of the selection principle of the Quantum Theory, as is pointed out in a note which will appear in the *Astrophysical Journal*.

As it seemed that the subject of infra red absorption has an important bearing on the question of temperature radiation, and the origin of spectral lines, experiments were conducted in this laboratory with a mirror spectrometer, and a Paschen galvanometer to find by

studying the absorption of the vapour in this region if Bergman lines (3, d—4, f) would be absorbed, and if so at what temperature. It was found that the vapour does not exercise any selective absorption in this region up to about 800° C.

*Refraction and Dispersion* —By means of a Raleigh Interferential Refractometer, the absolute value of the index of refraction of the vapour was determined for different wave-lengths in the visible region at temperatures up to about 800° C. The results show that the vapour behaves like sodium vapour in that all the waves on the blue side of the first members of the principal series travel in the vapour with a higher velocity than in vacuum.

It is also interesting to note that when the temperature of the tube was raised very high, the fringes were very much attenuated even to the extent of complete blurring. The attenuation was probably due to a violent molecular agitation and impact similar to that published by O.Guoy, (*J. de Physique et la Radium*, pp. 3-11, July, 1920).

A preliminary statement of these experiments was made before the Mathematics and Physics section of the Indian Science Congress recently held at Lucknow, and a full account of them with the results will be published in a series of papers in the *Philosophical Magazine*. Further experiments are in progress in this laboratory to study the properties of the electrically luminescent vapour.

G. L. NARAYAN.

## THE DRUM-BEAT OF ANGELS \* (II.)

37. "The origin, the midst, the end,—  
 These all the stages comprehend  
 Of objects seen, or thoughts conceived;  
 And what exists not at the first,  
 But on the view does later burst,  
 Dissolving soon in sleep at last,  
 To be by mind again up cast,  
 This world, including place and date,  
 Is myth, bound up with waking state.
- "For what at one time none could see,  
 And will at one time cease to be,  
 Though in the middle stage perceived,  
 Is fair or ugly phantom, sure,—  
 Lifelong, but still illusion pure.
38. "What at the first and at the end  
 Exists, and still its grace must lend  
 Ere time or space leap into birth,  
 Whose absence mind can ne'er cognize,—  
 This self is real, say the wise.
39. "But duty, wealth, sweet love, release,  
 Are fourfold means securing ease.  
 The first three lead to transient joys,  
 Which men pursue with pomp and noise;  
 But he who seeks not freedom dear,  
 He leads a bestial life forlorn,—  
 Better if he had ne'er been born!
40. "The universe is Brahman, know.
41. "Then quell the six, give up the three,  
 Break through the two, and grasp the free—

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\* A free translation of *Vedanta Dindima*, an exposition of Vedanta by Nrsimha Sarasvati Tirtha.

Note to 41.—The six: internal foes, love, anger, pride, ignorance, envy and avarice.  
 The three: attachments to (1) wife, (2) son and (3) riches  
 The two: the dualities in life—heat and cold, pleasure and pain, etc.

The one beyond the rest." Thus, sure,  
The bliss of freedom ye secure.

42. "First cleave the six, then cleave the five,  
To cleave the four and three then strive,  
Shake off the two that chain the soul ;  
Yours be the shining one within :  
Eternal bliss shall then begin.
43. "Unmarked, unbound by form and name  
I cannot be this bulky frame ;—  
'Tis mine, an object seen by me.  
By nature free from birth and death,  
I die not with the loss of breath.
44. "The witness of the vital breath,  
Nor thirst nor hunger tortureth ;
45. "And me, desorying all her moods,  
Who can identify with mind ?  
Not ignorance and woe combined  
Can vex me, whom no wishes bind.
46. "The right—discerning intellect,  
Whose judgments still our acts direct,  
I cannot be, because I see  
Its weakness and its fallacy,  
And hence no agent can I be.
- "The body, breath, mind, intellect,  
And ignorance—these in effect
47. "Are sheaths which for the sheathless soul  
Deluding Maya wove. The whole  
I witness. Hence impervious  
To ills that human vigour drain  
I am, and so shall e'er remain.

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*Note to 42.*—The six : the gross body consisting of six tissues.

The five : sheaths.

The four : internal organs

The three : states of the soul, waking, sleep and dream

The two : the seer and the seen.

For ill affect the sheaths alone  
And cannot reach the shining one.

48. "Discerning thus, who oft reflects,  
No change in objects me affects,  
I am the eternal witness pure,—  
A flow unchecked of consciousness,  
Is wise and free, whose happiness  
Innate, divine, what can repress?  
All troubles from a second spring,  
Alone I am happier than king.

The same three marks of self abide  
In sheaths as in the world outside.  
Thus all is Brahman,—matter, mind,  
The soul, too, such, the sage declares,—  
This too the threefold impress bears.

49. "And Maya I can never be,  
Nor its effects, for ceaselessly  
I witness both as objects mine,  
And all that I conceive or see—  
A hill or notion of a tree—  
Are alien things outside of me.

"But as in sleep I see no more  
The objects that I saw before,  
My part as witness I can play  
Or play no more, as please I may,  
Even as sleep dissolves the world  
That dream or waking had unfurled.  
The Lord that slept and waked from sleep,  
Nor sleep nor wake that Lord can keep:  
Dream, sleep, and waking are the inns  
Through which he passes every day,  
Like pilgrim passing on his way,  
To win release if win he may.

"The real nature of the soul  
Tis sleep unfolds, which shows the goal  
Of man's ambition, heavenward bent,  
The source of bliss pre-eminent.

“ But if the objects come to nought,  
 And all are objects, seen or thought,  
 Then, when we think of self, is not  
 The self an object made ? ’ Ah, no.  
 ’Tis self that speaks of self as seen  
 And self sole seer has always been.  
 And, once this truth we clearly see,  
 The self in truth described may be  
 In terms both right and contrary.

50. “ I am thus All, and yet not All,  
 And likewise mine all things I call,  
 That strictly are not me or mine.  
 For one is All, and All is one ;  
 In Brahman are distinctions none  
 Of time and place, or gross or fine.

51-53. “ Existence, consciousness and bliss,  
 That are to sheaths ascribed amiss,

54-57. Or to the five-fold elements,  
 These rightly to the self belong,  
 Of either group the basis strong.  
 Through sheaths and elements the one,  
 Sole thread of being still doth run.

58 “ And evidences all agree,  
 And prove that self is Brahman free.  
 For Brahman is but consciousness,  
 Existence, Bliss, and nothing more,—  
 So teach the scriptures o’er and o’er.

59-63. “ And name and form—do these inhere  
 In things ? But yet we hold them dear.  
 Both daily change, while things persist ;  
 And, hence deluding even kings,  
 They are no real part of things,

“ While self, devoid of form and name,  
 Their witness still, is e’er the same.  
 These marks of self, of Brahman free,

**THE DRUM-BEAT OF ANGELS (II)**

Existence, bliss, and consciousness,  
Admit of neither more nor less :  
Three dwell in one, and one in three.

64. "The Brahman is reality,  
Appearing as the world ye see ;

67. "Thy inmost self is Brahman true.  
Who knows this is released in life,  
Though toiling still for child and wife.

"Why is the self so loved, so sweet ?  
Because of Joy it is the seat,  
What pleasures can with it compete ?  
What is the secret of the self ?

For love of self is loved the rest,  
And even the dearest and the best,  
High honour, fame, (be this confest)  
Not for their sake but for the sake  
Of self, are loved and so esteemed,  
More precious far than life are deemed.  
What profit shall it prove to one,  
If soul be lost, and all else won ?

All clad in name and form that gleam  
Are consciousness alone supreme.  
Distinction, bondage, both are false,  
And form and name do still deceive :  
From past impression they receive  
Their import which does hourly change.  
Good looks may oft a Syren hide,  
'Tis Maya spreads her nets so wide

68 69. "To quell distinctions is release  
From name and form that vex and tease  
The cleverest in Samsara bound ;  
No zeal for faith, no eloquence  
Not though it charm both soul and sense  
Divorced from knowledge leads to bliss,  
All other futile hopes dismiss!



70. "No works to gratify desire  
Consuming precious life like fire,  
Nay nor the bidding will refrain  
From wrong—not this can freedom bring  
But grace divine thy ransoming.
71. "If Brahman should remain unknown,  
A life is lost. The seed is sown  
Again of endless births and deaths.  
With knowledge is life's purpose won—  
No more travail, no sorrow, none.
- "While men will sail on roughest seas  
On others' wealth and power to seize,  
Gaining ill ends by means abhorred.  
And threatening with the brutal sword  
Unsheathed,—'tis pity thus to find  
They will not inward turn the mind  
And know the Self that is the seat  
Of bliss entire,—beside which gold  
Is dross, and earthly joys but cold.
72. "Of yore a party formed of ten—  
A band of fools, Quixotic men—  
Happening to cross a flooded brook,  
Though all are safe on shore, yet look  
Affrighted lest the current took  
From them a victim; so they count.  
But each, alas, himself omits,  
And counting nine does lose his wits;  
Then 'gins to weep and wail aloud  
And rolls in dust and beats his breast  
With fancied loss, finding no rest;  
Till from among a pitying crowd  
A stranger straight the blunder sees  
Much wondering at their mental mould,  
And proves no loss of young or old.  
The numskulls ten thus passion-tost  
Rejoiced to find again the lost  
Though none was lost or saved indeed.—  
Thus none are truly bound or freed.

"The Jeeva sees the senses five  
And inward organs four contrive  
To make the fairy scenes of life ;  
And drawn still outward by these nine,  
Forgets, like one who's drunk with wine,  
And in illusion 'gins to pine.

"As witness, Self all else doth see :  
No object seen it e'er can be :  
Outward ye look in vain for bliss  
This Self, the tenth, the wise discern ;  
And from the rest, their mind they turn.

73. "What though the threatening bees might sting,  
And with their buzz the air might sing ?  
The brave still seize the honey-comb.  
Unheedful thus of objects seen,  
Seek Brahman with pure eyes and keen.

74. "How small are sensual pleasures all !  
On noble natures soon they pall ;  
But Brahmic bliss is endless joy.

75. "Mansions and patrons-bounteous friend,  
Wealth, brother, spouse or child—they rend,  
Our lives, in thralldom without end.

76. "In waking mood, from early morn  
When golden tints all earth adorn  
Till night when silence hushes to rest,  
Reflect on Brahmic bliss alone,—  
Cease under fancied ills to groan.

"For Death, he threatens all on earth,  
And men of high or humble birth  
Must to his sway relentless yield ;  
Uncertain is Death's hour or date.  
Be warned in time, quell ruthless fate  
Before ye find it all too late !

77-79. "The Mayic sheaths to ills are prone,  
With dawn of wisdom these are flown ;

But self the seer from them is free,  
As when the tenth is found at last,  
The nine rejoice, their anguish past,  
So when himself the Jeeva knows,  
He turns in bliss from earthly shows.

80. "Those *means* of understanding nine  
Through which the eternal Self does shine  
Discard them. For the Self at will  
These organs into being calls.  
On Self, rid of these shadows false,  
In silence rest from Pain that galls.
81. "He who dissolves the world around  
In Brahman thus, in joy profound  
The bliss of oneness feels, and sings; —  
"Joy! joy! I am now one, now all:  
Me nothing vexes, great or small."  
"Daily from Brahman souls proceed,  
In him they live, to him recede.  
All elements from him evolve  
And into him again resolve.  
The vanishing, returning world,  
Melts to its real essence, Self,—  
Bright, bright, beyond all power and self.
82. "Dismiss the notion of the world—  
Which from the self is still unfurled,  
By false, imposing fancy bred—  
And Bliss as basis stands secure.  
The highest truth one thus attains,  
The farther shore of knowledge gains.  
The Brahman and the Universe,—  
Each other's obverse and reverse,  
They seem eternally to be.  
The wise the Brahman only see.
83. "If love of form and name be lost  
Then shall ye lose the ceaseless host  
Of ills embodied creatures feel;  
Wisdom alone the wounds can heal

Of blows that Fate unkind doth deal.  
 Until ye know your inmost self  
 As bliss, existence, consciousness,  
 To dream release is profitless ;

84. " And further nought remains to know,  
 Since lasting Peace is gathered so.

85. " Peering through all this magic show—  
 Of jewelled beads a glistening row—  
 The self might seem to need support ;  
 But life to Self is naught but sport,—  
 It sees unmoved scenes worst and best ;  
 Supportless, still supports the rest.

86. " Reflect that all is Brahman pure,  
 Let no desire this truth obscure ;  
 Content with what ye have remain,  
 Doing nor knowing is your gain.

87. " Nor rude nor learned can attain  
 Deliverance from this Karmic chain ;  
 Each has his lot of weal or woe.  
 The enlightened heart brims o'er with glee,  
 The other is crushed with misery.

88. " Doubt troubles not the wise nor bleeds  
 His heart for done or undone deeds  
 The one in all he knows ; for him  
 Delusion fails this truth to him.

89. " The soul that knows not Truth's great Word  
 Is but the shadow of the Lord.  
 Stern Karma, that all things affects  
 And with its woes our life infects,  
 Even on this shadow has no hold,  
 Much less can drag into its fold  
 The Lord that all things does uphold.

" The world is but my consciousness  
 How then can aught my soul distress !

How then can fire or wind me hurt,  
 Me with matchless splendour girt ?  
 Or objects injure or deceive  
 Who know that by my life they live  
 And cannot, else, a moment thrive ?  
 For you and he and they around  
 But to my consciousness are bound,  
 In me alone their life is found.

90. "O, wake we then from woful trance  
 Of deep pernicious ignorance !  
 The self is truly Brahman free."  
 The ravishing sounds of Vedic drum  
 That strike the wisest mortal dumb,—  
 These, in our ears, are ringing still,  
 And, uttering words that glow and thrill,  
 Low cravings cure, and doubts dispel.  
 Then hear them, daily, pondering o'er  
 The saving truth, and ills no more,  
 Or fancied ills will you annoy ;  
 Your heart will aye vibrate with joy."

With this, the heavenly drum-beat stopped,  
 Then from the singing gods there dropped  
 Rare dulcet symphonies unheard,—  
 To deepest depths my heart they stirred.  
 They danced and sang in circles gay ;  
 In mystic cadence flowed their lay :—

#### ALL IS SELF.

"There is no Prince of Darkness, Devil,  
 There is no Principle of Evil,—  
 No fiend or fairy can thee ail,  
 Behold thyself behind the veil !

There are no flowers that bloom or fade,  
 No dazzling light, no dismal shade,  
 No trees weighed down by golden fruits,  
 Or wilderness that swarms with brutes,  
 No streams that flow o'er yellow sands,

## THE DRUM-BEAT OF ANGELS (II.)

No damasked dale that praise demands,  
No world of harrowing ills so full,  
Or scenes surpassing beautiful ;  
No princess with her lovely face,  
No horrid sprites or monstrous race ;  
No power without that gladness brings  
To the Self within that ever sings ;  
No sun, no rainbow tints above,  
No stars, no azure vault you love ;  
No friend, no foe, no hope, no fear,  
No youth, no age, no hill, nor mere ;—  
But all is self, transmuted so  
By Maya still that gilds the show.

If power and love to death must yield,  
And from his darts no art can shield,  
No fearful foe is death to Self ;  
For all is Self in deep disguise,  
As know the unattached, the wise.

And what if some thy schemes oppose ?  
O, murmur not against thy foes,  
Designing 'gainst thy life or state,  
Urged on by unpropitious fate.  
'Tis but desire that weaves thine ill,  
Desire not : bid thy soul be still."

The hymns on which my ears had fed  
Now ceased. I woke, the vision fled.  
May every soul embodied haste  
The Bliss of Freedom straight to taste !

K. A. KRISHNASWAMY IYER.

## THE CONTACT OF INDIAN ART WITH THE ART OF OTHER CIVILISATIONS.\*

### I.

THE process of art has two dimensions. The one is invisible to the eye. It stretches from the object of artistic representation to the artist. This is the main direction of creativeness and all works of art lie on that route. A work of art however exists not only by its expressive form. It is at the same time a means of communication. Primarily, it comprises an individual experience intimately connected with some concrete object; secondarily, it brings into or represents the contact of an æsthetic confession and a receptive mind. By a law which does not belong to the physical world, the two dimensions, the inner and the outer, are inversely proportionate. The deeper the object has sunk into the artistic subject, the smaller their distance has grown, the more intense the effect the work of art has, the more lasting will be the impression it creates and the greater will be the number of persons who get impressed. Duration and extension of an artistic tradition are thus ultimately dependant upon the vitality of one or a few works of art.

Indian art spread eastwards and westwards. We can follow its expansion as far as France and Ireland in the West, and Japan in the East. From the 2nd century B.C. onward to the fourteenth century A.D. it was a continuous source of inspiration to the Far East and proved an intermittent stimulus to Western art. India's power of artistic colonisation is equal to that of Greece. Almost simultaneously these two centres of civilisation which stand for the fusion of Aryan and non-Aryan elements sent forth their traditions which mingled without any resistance with the indigenous arts and crafts of any country they came to. Greece, before its fatal end, had extended its artistic dominion over Asia Minor and Italy. After its death Rome became the heir and colonized the whole of Europe, the north of Africa, Minor and Central Asia and the Far East. The Indian and the Hellenistic tradition thus were for sixteen centuries rival missionaries promulgating their artistic creed

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\* Adharchandra Mookerjee Lecture for 1922 delivered on the 16th and 17th December, 1922. The second of the two lectures will appear in our next issue. We reprint from the *Calcutta Review*. Since the matter corresponds with that of the lectures delivered by Dr. Kramrisch in Mysore and Bangalore readers will probably be glad to preserve it. The lecture has just been received, and we have had to delay a number of reviews, as well as "College Notes," to make room for it.

over the surface of the whole world known to those ages. The equally great success of these antagonistic efforts is striking. The two mother countries India and Greece, both peninsular, both in the south of a continent had independently evolved their art, though their remote Aryan unity left traces in either. From these two roots art grew up in two vigorous stems which got full growth in their own soil and spread their branches heavy with fruits to sunrise and sunset and the twigs crossed each other and formed a bewildering thicket. But wherever their fruits dropped the new seedlings bore the unmistakable features of the mother stem and the profuse crop which thus grew on the ground of the multifarious traditions outside India and outside Greece is called Medieval art in Europe and Asiatic art in the East.

Medieval European and Asiatic art, therefore, are the syncretistic periods and regions of art, while Greece and India and similarly Egypt, Mesopotamia and the Far East are the creative centres. Of these, however, Greece and India had the most far-reaching bearing.

Forms of art do not spread by themselves; they need a vehicle in which they can be carried and various vehicles run from India in various directions. Religion was the driving force which moved them towards the East. While Central Asia and the Far East were inspired by and became permeated with Buddhistic speculation and the pictorial forms peculiar to Buddhistic art, the south of Asia, Burma, Siam, Cambodia and the Sundia Islands shared Buddhistic and Brahmanic divinities and their corresponding forms of art with India. Indian works of art, however, were brought to the West far less in the service of religion than in that of commerce. The fashionable world in Rome during the days of Augustus paid fancy prices for Indian pearls, brocades and textiles and Indian ivory work was as much in demand by the Christians of Egypt as it was liked by Charles the Great. The currents of Indian art outside India have thus a threefold source and speed. The one which links Indo-China and the islands, especially Java with India, keeps measure with the Indian evolution and its peculiarity is due to the indigenous art of the country which has become fused with Indian tradition from one centre to the other. The invasion of Indian forms into Central Asia on the other hand had to face not only the artistic traditions of every special country but also those currents which came from the extreme East, from China and from the West from the Hellenistic world. Still more currents mingled in the West to the effect that while Indian art to the South-East of Asia means a natural growth and therefore a continuous unity, it becomes an inspiring incitement to Central and Eastern Asia as long as Buddhism maintains the rule, and in the West



it occurs sporadically and does not lose the charm of the exotic as long as it is not absorbed by and made into a Western convention.

The transmigration of forms of art proves with accuracy which features of the national spirit of any art can be transplanted—the elements accepted for instance by China will differ widely from those which found favour in Rome. It testifies on the other hand what features of the mother art resist all transformation so that in the most complex, locally and racially remote combination they still remain distinct. In short, colonial art keeps up the salient features of the mother art; but as these enter new combinations, compelled by merely an outer necessity, that is to serve religion or trade or fashion, it is needless to emphasise that the works thus produced will be interesting documents with regard to the history of form but cannot claim to be works of art. For spontaneous growth, the fundamental condition for creation is replaced there by a clash of traditions and purposes. Indian art comes to an end the moment it leaves India. As long as it can afford to spend it does so. The gain, however, is not on its side and the chapter of Indian art closes when the Eshin Sozu painted his Amida and when the Kathedra of the Bishop Maximian was carved in Ravenna. These masterworks are nothing but Japanese or nothing but early Christian and yet they could not be as they are without that faint scent of Indian tradition which pervades them.

We have to come back to them. But we have to follow the route which Indian art took. At every turning of the way we shall meet it offering an unknown mood—A Siamese Buddha head, for instance, though obviously derived from the Buddha type familiar to the sculptors of Magadha is yet a new individuality. Its refinement is less spiritual than physical; all the features have grown thin, and sharp accents emphasise them in pointed outlines. The subtle modelling of the Indian prototype has given way to a strained and sensitive definition of the Buddha's features and the calmness of his meditation has given way to a state of trance where all nerves vibrate. This sort of sensitive rigidity, hardened modelling and sharp and pointed outlines are typically Siamese. Expression and body, body and dress have become separate features. An almost imperceptible cruelty lingers for instance round Ardhhanarisvara's eyes and mouth while his male-female body is equally above sex and above life on either side. It stands in heavy stiffness, for all movement has been concentrated into the winglike folds of the garment. They swing to either side sharp like knives.

The Buddha head dates back to the 9th or 10th century and the Ardhhanarisvara image to the 14th or 15th. The Siamisation of the

Indian form has progressed; sharp outlines joined in narrow angles have overpowered the round modelling of the Indian prototype. The art of the Sukotai Savankolok, of which the bronze Buddha head is one of the finest examples, is the spontaneous Siamese continuation of the art of Magadha. The Ardhhanarisvara figure however visualises the effort made to connect the two elements with the result that an Indian body stands on Siamese feet, is clad in Siamese folds and wears a Siamese head. This style is frankly eclectic. The conclusion is that India supplied Siam with its iconography, Buddhistic and Brahmanical and with the iconography, the "icons" were transplanted and translated into Siamese. The one feature of Indian art which remained intact was the modelling in the round, though it had to withdraw from those parts of the figures which received the greatest attention by the Siamese artist. Face and garment were freed from the Indian discipline and only those parts of the body which remained uncovered also remained Indian. It is the plastic element, the modelling in the round which asserted itself against Siamisation, and was carried along the centuries of Siamese art as dead weight, surrounded by frail and nervous outlines.

The Khmer art of Cambodia contemporary with the period of Sukotai Savankolok let its individuality flow through the channels of Indian tradition and received it back purified and strengthened. There is scarcely any idiom of Indian art with which the Khmer artist was not acquainted. And yet his language is entirely new. Warriors, for instance, defile on some of the relief pannels of Angkor Vat. Their crowd is arranged in a firm row of which foot—and head—line are drawn in straight parallelism. The rhythm of their bodies strained forward in one direction, forms pattern-like segments of the lowest part of the relief. Each of them has a motion of its own. The distorted ejaculations of limbs and faces of the mob come to a sudden stop where the arrow bearers march in severe dignity. Their arrows, however, reflect and repeat the curves of hands and fingers of the former group; while, on the other hand, their energetic steps become enhanced by a similar movement of the horses. The group of the spearbearers at last throngs forward without restraint and their rushing bodies are bent by the hurry of their action. Yet in spite of all those contrasting groups and in spite of their arrangement is their procession but a narrow uniform strap at the bottom of the relief. Subtle trees of exuberant growth stretch over the rest of the surface actionless, but moved in peaceful, playful curves. Top and bottom of the relief at last are strewn over with a profuse sculptured ornamentation. The composition of this relief has nothing in common with Indian art of the same period, but

it is closely related to compositions met with at the time of Sanchi. There too figures are arranged in rows and are set before a tapestry-like background of vegetation. This similarity is due to the epical spirit of either school. Narration there is the chief purpose. Contemporary Indian art, however, had progressed from narration to a canonized symbolism where such things as a cluster of trees and the like had become superfluous and insignificant. The age of mind therefore in which Khmer sculpture is executed agrees with the Sanchi stage of Indian art, with the difference that while the Sanchi artist had to rely on his own resources, the Khmer sculptor has the whole stock of the Indian inheritance at hand. And this may be seen in the supple modelling of the bare bodies and in the curvature of the branches. But what he had to give of his own exceeded that which he accepted. Again his hand similar to that of the Siamese artist cannot but chisel in angular outlines, which subdue and surround the fine modulations of the "plastic" and make the whole relief more into a drawing in stone than a sculpture. This way of artistic treatment is the natural expression of the peoples of Further India. Another peculiarity is their sense of proportion which makes the figures of men simply grown over with and buried under an immense vegetation. This way of treatment, however, has its roots in India, though the part which vegetation plays there is far less prominent. As a whole the Indian tradition and the indigenous inspirations of Further India keep the balance and make a strong amalgam because their affinity is close. But it must not be overlooked that the active part is played by the inspiration of Further India while the Indian tradition figures as foundation or background, and shines through the thin atmosphere of Khmer art.

The distribution, however, of creative power and the capacity for absorption is entirely different in Java. Javanese architecture and sculpture of the empire of Mataram are the works of a local school of Indian art which achieved its masterworks on this island, similar to the genius of Greece who at a time of full maturity occasionally found its culmination on Knidos or Lesbos. The Hindu kingdom of Mataram most probably had its artists brought from India. Sometimes however a local hand is traceable even in the sculpture of Middle Java. A relief from Tjandi Prambanan, for instance, maintains the rounded softness of Indian prototypes while a distorting eagerness bends arms and legs in unexpected angles and makes the physiognomies of men and animals alike grin with malicious cruelty. Angular distortion of the Indian limbs and a cunning brutality of facial expression makes Javanese reliefs and especially those of Eastern Java akin to the artistic ideals of

**Further India.** This, however, was not until the eleventh century when middle Java had lost its power. A new flood of Indian art then spread from the South of India to the East of Java and at this time the Indo-Javanese mixture produced a compromise of which the obverse has all the qualities of Indian form while the reverse exhibits those of Malaya-Polynesian conception and the truth and perfection of either is alike. The figure of Ganesh may stand for one of the purest achievements of an all-round restlessly modelled volume, a treatment so dear to Indian art, yet the back view presents on its flattened surface the mighty grimace of a Kirtimukha dissolved into petty protrusions interspersed with holes full of dark shades, and this appearance perturbing with its vicissitudes of clumsy shapes and formless holes shews the indigenous style of Eastern Java. Nowhere in India has the head of the Kirtimukha a similar gruesome liveliness and it seems as if this ornamental device were given to India from the store of Polynesian totemistic and frantically phantastic animal heads. But where the grotesque and the gruesome has no right to appear, figures like that of Prajnapara Prajnaparamita or of Durga Mahishasura Mardini attain sublime in carnation in purely Indian form.

Middle and Eastern Java were the leading centres of Indo-Javanese civilisation. The west of the Island remained more aloof from Indian civilisation. And yet its sculpture renders the breathless calm of meditation but does so with means of its own. The squatting figure of the man who holds a lotus bud has been laid into one vertical plan and reminds in its symmetrical simplification of the sitting Buddha from Sarnath. But it would be premature to draw any conclusions. It must suffice for the present to point out where, under what conditions and surrounded by which forms the Indian element rules, influences, or is subdued. The Javanese experience is complex. Java proved an extraordinarily fertile soil for the evolution of the Indian principle of form. In the outstanding works of Mataram it scarcely added anything of its own but it is worthwhile noticing that the ease with which the heavy full round figures in the reliefs of Borobudour move is the same that gives unapproachable dignity to the Eastern Javanese figures of Durga and Prajnaparamita. No indigenous Javanese trend of form will be found there. The extremes, however, which mingle with and set the limit to Indian form are the dissolution of the plastic volume into small sculptured compartments which rise as an agitated pattern over a plain and dark ground on the one hand, and the geometrical discipline of an abstract scheme on the other hand. But either convention has the two-dimensioned surface for its working field and it is this Malayo-

polynesian symptom which had to offer the strongest resistance to the Indian perception of form, which comprises the three dimensions of space in one plastic volume. Java puts the full-stop to Indian art in its propagation south-eastwards.

Surveying the extension of Indian art in the south-east of Asia it proves to be colonial art in the same sense as Greek Art in Asia Minor or Italy. The indigenous traditions of the various centres of artistic production, as the Khmer style of Cambodia or the Malayo-polynesian style of Java were either subdued or remained untouched. Buddhist, Sivait, Visnait ideas and their corresponding images and forms were brought to the colonies. How easily they were accepted there is testified by their local taste, which in the case of Cambodia and Java is far above provincialism. Indian art in Java or as created by the Khmer artists is in the same position as it is in the southern part of the motherland. There too the Dravidian population had a strong personal way of artistic expression. Yet this was overcome by the æsthetic of Northern India. The contact of South Asia with Indian culture dates back in historical times to the first Christian century for Java or even to the age of Asoka with regard to Further India. Thus the penetration of forms and ideas in the successive centuries had that leisure which is necessary for a productive assimilation.

The propagation of Indian art, however, in a north and north-eastern direction, though historically not less fragmentary, has at least one cause in common. It is Indian art in the service of Buddhism which supports the art school of Gandhara during the first five centuries of the Christian era, and migrates to Khotan where it is traceable at the close of this period, and takes its way through the Turpan to the confines of China where it reaches its climax in the caves of Vungkong and Longmen and in the ninth and tenth century in the caves of the thousand Buddhas at Tun Huang, while in Japan at the same time the Buddhist frescoes of the Kondo of Horiuji were painted and Eshin Sorn got inspired by Amida's glory. But the most essential links of this north-eastern chain of Buddhist art are missing. Nepalese art is not known before the ninth century and the earliest Tibetan painting was found in China in the caves of Tun Huang, in the ninth century, brought or painted there when Tun Huang was under Tibetan domination.

We need not fight against the windmills of Gandhara which appear to European eyes so huge because their Greek features are so near to cherished reminiscences. The question for the present moment is: What did Indian art contribute to the International school of Gandhara

for such it was, as Indian, Parthian, Scythian and Roman colonial workmen and traditions met there. It gave its plastic conception, not at once yet in the course of time, and in this way the syncretistic Gandhara sculpture became Indianised. Buddhism and local mythology moreover supplied the sculptors with Indian themes. The most ardent problem, however, involved in Gandharan production is whether, as it is held the pictorial type of the Buddha originated in Gandhara or not. The question still has to remain open. But it is remarkable that such essential *lakshnas* as the *ushnisa* and the short curves of hair turned to the right and the elongated earlobes are met with in Indian sculpture of pre-Gandhara time, when the representation of the Buddha was still taboo to pious Buddhists. Examples of this type are carved as detached heads single in lotus-medallions which adorn the railings from Bodhi Gaya; there a standing figure of a Dvarapala exhibits the same *lakshanas*. \* There can be no doubt that these representations did not represent the Buddha and it is difficult to say how far the *lakshanas* of the Mahapurusha were associated with these unidentified heads. In any case Indian sculpture was acquainted with a plastic form which is identical with the latter *ushnisa* at a time when neither the bodily representation of the Buddha nor the Gandharan productions had come into existence; and so much can be said that these distinctly Indian bodily characteristics were not for the first time translated in stone in the province of Gandhara; on the contrary the undulated hair of early Gandhara Buddhas betrays Hellenism and is against the Indian tradition. Similar as in the case of this iconographic detail is the general behaviour of the Gandhara artisans; they took in every case the iconographic suggestions from India and as they were no longer fettered by any religious or artistic scruples [and had the entire tradition of Hellas and India and also of Central Asia at their command, they did their best in illustrating as well as they could the stories and sacred heroes for which there was so much demand amongst the Buddhist devotees. The artistic quality of this market supply naturally cannot be but of the worst sort. The suddenness of the Indo-Hellenistic clash could not cause anything but disturbance on either side. The Hellenistic importation on the other hand got no supply on the spot and its fate was to be overcome and annihilated by the living force of Indian art. Yet there is one scheme of composition which was of greatest consequence in all future arts. This is the symmetrical arrangement of the groups of divine personages for the purpose of worship. The beginning of this frontal symmetry can be found already in Barhut and also in Sanchi. There of course some symbol or other takes the

place which later on is occupied by the icon. In Gandhara for the first time however those triads as Buddha with Brahma and Sudra are introduced and sometimes the donors represented in an attitude of worship are admitted into their circle. This strictly symmetrical form of composition originated in Gandhara and spread from here in the service of the Buddhist Church to the Far East and reached its height in Central Asia and Japan in the 10th century and is alive in Tibet to the present day. This artistic achievement of Gandhara is of an ecclesiastic type. Though Indian art is religious and at times conventional the business spirit of a clerical institution was needed to invent a way of representation where the donor could enjoy seeing himself brought into direct contact with the object of his worship and where on the other hand any number of new gods to be propitiated and any combination possible was easy to be managed. This economical mechanism was set into working order for the first time in Gandhara. This way of representation became the standing type for the representation of Sukhavati, Amitabha's Paradise in the West. The Mandala of Tun Huang are based on Indian painting as far as the representation of human bodies is concerned. Their curved outlines betray Ajantesque tradition.

A drawing on paper gives the key how such compositions were quickly supplied to the market. It was used as pounce; the one half of the pounce is pricked the other drawn in outline. Variety was brought into the symmetrical monotony by a brilliant display of symbolic colours. The mechanisation of Buddhist art led also to another way of rapid multiplication. Numberless Buddhas were stencilled and formed a geometrical pattern; for the greater the number of images consecrated, the greater the merit of the donor. The caves of the thousand Buddhas, the caves of the million Buddhas are in this respect pure works of Buddhist art, for Buddhism in India had no special art of its own. The forms were Indian and the iconography Buddhist. But uprooted from the Indian soil, iconography, that is the prescription, becomes almighty, for the creative vigour which soaks its strength from the soil of the motherland had to be left at home. Buddhist art fostered the various techniques of reproduction. Clay models, stencils and pounces were in use and the most ancient wood cuts known were current amongst the communities of Central Asia, though their origin lay in the East.

No doubt Central Asiatic art grew up in the local centres of Buddhist worship. The forms of art we therefore meet with are Central Asiatic conglutinations of the neighbouring zones of art. China

and India, Persia and Greece were united there. In this melting pot we find the Indian stuff to be prevalent. The principle of decoration, for instance, peculiar to the caves of Tun Huang is the well-known tapestry-like cover of paintings (cf. Ajanta) extended all over the walls and the ceiling. But the exuberant jungle of living forms has been cleared and dried up. Only what was iconographically necessary remained and covered the walls in stereotyped order. The migration of Indian models into these centres of ecclesiastic art is indicated by several paintings and sculptures which, though made on the spot, keep up the Indian convention. These find; represent a provincial museum of Indian art. They mark movements of the Indian artistic evolution separated by a thousand years and more. An ink-drawing found at Tun Huang for instance, repeats in free interpretation the design of several reliefs of the Sanchi gateway. The crowded figures which stand in rows and on top of one another according to the Indian conception of space are Indian in spirit and construction in spite of their Chinese features and costumes and exemplify a tradition at least as remote as the Sanchi monument.

A carved and painted wooden slab from Ming oi Karashar introduces a new and nude type of the Buddha. The two upper pannels correspond with the style of sculpture in vogue in India under the early Guptas, although the faces of the figures do not try to hide their Mongolian origin of which the lowest pannel is a frank confession. But composition and movement, proportions and modelling, the treatment of cloth and skin coincide with that of early Indian art where no Hellenistic suggestions were accepted.

Some temple banners from Tun Huang painted on silk, cotton or paper represent contemporary Bengal art as understood in Central Asia and China. The Avalokitas show different distances of interpretation from Bengal prototypes. The Bodhi-attvas on the banner to the left, apart from the treatment of his toes and from the flower pattern on top, could pass for a mediocre work of that school of Bengal painting of which only examples three centuries later than the Tun Huang banner have come to us.

But the most convincing test of the archæological and ecclesiastic behaviour of Central Asiatic Buddhism towards India is a large silk painting from Tun Huang; its inscription says that the different painted figures were intended to reproduce sculptured images worshipped at various sites in India. One of the figures is said to represent a statue in the kingdom of Magadha while others are either directly copied from Indian originals, as the lowest figure to the left, or inter-



preted by the local painter. In none of these examples is any Hellenistic feature traceable. Indian art migrated via Nepal and Tibet and pictorial representation was the most popular way through which Buddhism captured the hearts of the simple people of Central Asia. Its rapid success is due to the avalanche-like course it took. Impelled by missionary zeal it carried away within its movement whatever forms came in its way. Whether they were Hellenistic or Persian made no difference. And so we meet not only with provincial but also with hybrid mixtures where a Hellenistic modelling of the body mingles with the flowing style of Indian garment; and Mongolian flatness squeezes the heads into a distorted laughter.

The achievement of the various missionary schools of Buddhist art in Central Asia thus has one artistic merit. Subventioned by the wealth of Indian forms the local craftsman was enabled to meet the demand of devotees, however, so extravagant in their craving for numberless figures of Buddhas and Bodhisattvas. But as the directions to be followed were all more or less alike, symmetry resulted as the most dignified but also as the cheapest and quickest way of satisfying the donor. Thus a specific Buddhist art came into life in Central Asia which established the type of ecclesiastic art. The idiom of these paintings is Buddhistic and derived from Indian art-language. It achieved the refinement of an old pictorial tradition when coming to Japan; for although Indian art brought the type of the Buddha to perfection it was left to Japan to make Buddhism visualised in the myth of a landscape which has for its background the mood of Dhyani.

An inscription on the Hokke Mandala which was added at the occasion of a restoration of that Japanese picture, in the eleventh century does not forget to mention that this Mandala is a real product of India although except the Buddhistic composition in frontal symmetry, every brush stroke is Japanese. Yet the sacredness of the picture was enhanced by that suggestion, which reminded the Japanese worshipper of remote ages when emperor Ming ti of China had sent for the first time to India to seek the truth about Buddhism and his messengers brought back amongst other religious documents, the first Buddhist image from India. This was in the year sixty-seven.

The earliest trace, however, of Indian art outside India we find, strange to say, in a Greek work of art of the first half of the second century B. C. It is the relief frieze from the altar of Pergamum in Asia Minor, where in the war between gods and giants the threefold goddess Hekate intervenes with many arms. This is the most ancient document of the gods of India with multiple limbs and it is preserved in

**Greek surroundings.** And from this time onwards we meet with Indian motives here and there and now and then, without any continuity but brought to Europe just as pearls and precious silk, for which the taste of dying Rome had so much fondness. The other factor which eagerly seized the oriental form are the early centuries of Christianity, which were groping for some form adequate to their contents, and Indian or Persian, Syrian and Egyptian forms and symbols were welcome without discrimination for the expression of Christianity, the oriental faith in Western lands which could not be satisfied by Greek illusionism and which could not derive any inspiration from a non-existent Jewish art.

A painted cloth of truly pagan pattern rapt round the mummy of an early Christian lady was found in Egypt. There Bacchus triumphs and Selene dances and all of them wear Buddhist halos and their Greek limbs are curved with the voluptuousness of Indian lines. The product of Egypto-Indo-Hellenistic design has a pagan freshness of vision. The later examples of Europeanised Indian art of the middle ages appear in Egypt and Byzantium, in the south of France in Germany and in Ireland. The Sanchi composition of the war of the relics, which is not omitted amongst the treasures of Tun Haung occurs again in an ivory carving from Trier in Germany. The cherished motive of woman and tree, a leading device throughout the centuries of Indian art may be seen on the pulpit of the monastery at Aachen. There, however, the female figure is changed into a male and Bacchus plucks the grapes whereas the Lakshmi touched the tree with her foot. The ivory creeper of Indian art which carried there its life movement ornares the Kathedra of Bishop Maximian in Ravenna. But it is needless to enumerate the ivory elephant of Charles the Great or to draw attention, towards an ivory carving in Orleans, where Christ and various saints figure in the canonised scene of the great miracle at Cravasti. Most of these medieval reminiscences of Indian art lingered in ivory reliefs and the material and the form might have come from one source. Under the Karolingian and Ottonian empire the Indianisation of European ecclesiastic book-covers carved in ivory was at its height. One illustration may stand for the rest of them. It shows an altar in so called bird's-eye view according to Indian perspective, an altar-cloth with early Indian lotus pattern, rows of worshippers on top of each other the lowest row turning their faces inside the relief.—all this being early Indian conventions to visualise the third dimension, that is, the continuity of the assembly round the altar. This scheme belongs to the eighth century in Europe, to the second century B. C. in India. It must

have come to the West at an early date and has preserved the memory of India in the seclusion of an ecclesiastic tradition of work carried on by the medieval monks.

A late Mahajanist conception in a fresco from Baraklik gives the scheme of composition to an ivory sculpture in Germany representing Christ under the form of the Armenian Yima. To another period of Indian art belong the frescoes in the palace of the Pope in Avignon. There the proportion of tree and man and their peaceful and decorative harmony is of the same kind as that which accompanied the representation of prince Vessantara in one of the wall paintings of Miran and is akin to the treatment of men and forest in early Mughal landscapes.

The Indian element in European art was always inobtrusive and of no consequence. In the structure of European art it had the function of a loan-word. It remained a name of foreign origin for contents which had become familiar to Western thought. It disappeared completely with the Middle ages.

Resuming we may state :—Indian form outside India means : full unfoldment of the national genius of South-East Asiatic and Polynesian races ; in Central Asia it created the ecclesiastic type of composition for Buddhist art and in Europe the Indian element acted through fourteen centuries as a ferment in the abstract art of the middle ages.

STELLA KRAMRISCH.

## REVIEWS.

(Other reviews, college notes, etc. are held over because of the insertion of Dr Kramrisch's lecture.)

*The Music of India.* By H. A. Popley. "Heritage of India" series. Association Press, 5 Russell Street, Calcutta.

Music is the finest of the fine Arts and has a great value in creating and promoting sympathy among human beings. It is a happy sign of the times that Europeans are evincing increasing interest in Indian music. We welcome Mr. Popley's Book as a good introduction to the subject and commend it to our readers. It has chapters dealing with legend and history, the development of the scale, the Raga, Tala, musical compositions, musical instruments, and a comparison of Indian and Western Music.

The chapter on the history of Indian music is descriptive rather than critical and is full of inaccuracies which we hope to see removed in a later edition. We have no quarrel with our author for choosing the latest possible dates for the Sanskrit works quoted by him, as it is largely a matter of opinion. But it is impossible to make Panini the grammarian a contemporary of Alexander the Great (p. 9). The Ramayana is spoken of as having been "sung before King Dasaratha by Rama and Lakshmana"! The Veena was not the name for all stringed instruments, but there were several varieties of the Veena. The date of Bharata is not "usually accepted" as the 6th century A. D. It is not true that the Chera kingdom "for a considerable period exercised sovereignty over the whole of South India" (p. 13). 'Perumal Maharaaja' (p. 23) is not the proper name. Muthuswami Dikshita did not 'invent' a 'new' system of Indian notation which makes use of the different vowel syllables to indicate the various *Vikritis* of each *Swara*. The system is already in evidence in the 7th century inscription referred to on page 13 as published in the 'Epigraphia Indica Vol. XXI' (of course, a slip for Vol. XI). Venkatamakhi's work is the basis of the modern southern system as the author rightly points out, and therefore deserves better than to be dismissed in a single short paragraph. The chief feature of Tyagaraja's *Sangati* is not the elaborateness, but the variation in detail within the confines of the *murchana*.

The author notes that each note in the musical scale is referred to the tone of some animal (p. 33) but he misses the more interesting fact

that it is intended to express an emotion. Nor does he mention the evolution and persistence of modes through the ages, as for instance the *mārijani* which is based on the *Suddha mādhyama* and is referred to in Kalidasa's *Malavikāgnimitra* and in the *Sāngitaratnākara*, as in modern practice. Among the illustrations it is very pleasing to find one of our own veena experts, Seshanna.

The chapter on the comparison of Western and Indian Music is perhaps the most important. It is true that India attaches much more importance to melody than to harmony, but it is not true that 'Indian music has developed solely along the lines of melody' (p. 128) or that 'Indian music is music without harmony' (p. 130). As early as Bharata we have the instrumental band (*Kuṭapa*), and a harmony of vocal and instrumental music (*vrinda*). The grandest orchestra was known as *Kolāhala*. Nor is it true that Indian music-lovers care little for the 'sweetness of the voice' of the singer. In so far as music is meant to please the ear and delight the mind, the same principles apply to Indian and Western music, and the difference is one of degree rather than of kind. But in India music is, like the sister arts, primarily connected with religion, and expresses the soul of India. Its main object is to awaken the feeling, and matters of detail are subordinated to the psychological effect. So Indian music requires in its hearers 'something of that mood of divine discontent' which is the yearning, however, not for the 'infinite and impossible' as Mrs. Mann puts it; but for the too definite and real—which words fail to describe but which is the subject-matter of human experience at its highest and best.

S. V. V.

*A Modern Dictionary of the English Language.* Macmillan. 4s. 6d.

A dictionary is a great possession for any schoolboy and a very particular treasure is one that gives a meaning for *all* the words he is likely to meet. In addition to the resources of a standard dictionary there are words that have become current to satisfy the needs of modern science and discovery, words that are the result of our cosmopolitan relations and interests, words that fit new ideas and new outlooks—some with a respectable ancestry and some that defy etymology. They are nearly all here; technical words, scientific words, commercial words, Great War words, French words, German words, American words, slang words; words we honour and words we despise, but words in any case that we *have* to meet and the ignorance of which is a handicap in this on-pushing world.

Here are some that have already grown familiar but which will not be found in the older dictionaries : ærophone, hysteresis, madapollam, limousine, thermos, lighter-than-air ship, magneto, wireless, jumper, Peace conference, luminescent.

As this is a dictionary for young people many omissions have been made ; words, moreover, of rare occurrence, or of obsolete meaning are not included. All this, of course, makes the book much handier and more compact, but one wonders a little why its bulk has been increased by so many abbreviations. A, S. R. A., N. I. D., C. O. D. are scarcely useful to the average boy or man.

Foreign words and phrases, as also the aforesaid abbreviations, are printed in the main part of the book, a simple and straightforward arrangement that is much to be commended in a small dictionary.

There is a short supplement containing words that have been omitted for some reason from the body of the book, and words of new coinage but in constant use, many of them *slang* words that will afford much joy to the schoolboy. And who is to limit the number of ' telescope ' words that the mental fertility of youth will produce once it has been given an example ?

It is to be supposed that all these things tend towards the mastery of the English language ; so be it.

The young student will be glad to find here the meaning of such frequently occurring phrases as "purple patches," "personal equation," "surface contact," "tone poem," which usually make it necessary for him to appeal to outside help.

Any dictionary is fascinating but this is a mine of delight, and all school libraries should possess it, if not individual schoolboys.

It is printed in good clear type.

G. M. R.

### THE MAGAZINE.

Professor A. R. Wadia has kindly undertaken the task of editing this magazine during the editor's six months' absence on leave. He is going to make a bold bid to bring it up to time. Readers have been very tolerant in this matter of lateness, obviously realising the difficulties. Might we ask them to help Mr. Wadia as liberally as he has always given his own help ?



